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No. 176

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I. GENERAL INFORMATION

INDUSTRIAL CROP HARVESTS INCREASE NATIONWIDE

OW191220 Beijing XINHUA in English 1204 GMT 19 Nov 81

[Text] Beijing, November 19 (XINHUA)--Harvests of major industrial crops including sugar cane, sugar beet, tobacco and soy beans have increased in many parts of China this year to either two-year or all-time highs, according to reports from various provincial agricultural departments received here.

Peasants in Guangdong Province, one of China's leading sugar-cane producers, expect to reap 11.6 million tons of cane this year, 30 percent more than last and a new record. The harvest is on 216,000 hectares, 46,000 more than last year. To deal with the increased output, the province has added 26 workshops with an aggregate refining capacity of 10,000 tons.

In sub-tropical Guangxi, another of China's leading cane sugar producers, it is estimated four million tons of cane will be harvested on its 113,000 hectares. The annual refining season has started, with an expected sugar output of 500,000 tons, a 20 percent increase over the previous refining season.

Following a record harvest of 3.2 million tons of sugar beet in China's northernmost province of Heilongjiang, top sugar beet producer, and a good harvest in Inner Mongolia earlier this month, the Ningxia Hui Autonomous Region has reported gathering 90,000 tons of sugar beet, 34.3 percent more than in 1980. The region's refining capacity grew from 500 tons per day to 700 tons.

Henan Province, the nation's leading tobacco and second largest soy bean producer, grew 153,000 hectares of tobacco this year, 64 percent more than last. Supply and marketing cooperatives in the province had already purchased 340,000 tons, 80 percent more than in 1980.

By late October, China's other major tobacco growing provinces of Shandong, Guizhou and Hunan already reported record output surpassing the previous year by 30, 40 and 80 percent respectively.

Meanwhile, Henan's soy bean output was a record 1.32 million tons, despite a drought in two of 10 producing areas. The output, on 1.13 million hectares, is 44 percent greater than last year's. The province is China's second biggest soy bean producer next only to Heilongjiang.

In Heilongjiang, the Songnen plain between Songhua and Nenjiang rivers, which accounts for half of the province's soy bean land, reaped 1.25 million tons this year, outstripping last year by 20 percent. As a result of raising the purchasing price for soy beans by the state, the local communes has extended the hectarage by 11 percent. They have improved the cultivation method, selected good seeds and applied more manure as fertilizer. In some localities new techniques of weeding and spraying of chemical fertilizer have been adopted.

CSO: 4020/29

AGRICULTURAL RESPONSIBILITY SYSTEMS VIEWED

HK050700 Beijing JINGJI GUANLI in Chinese No 9, 15 Sep 81 pp 12-14

[Article by Liu Shumao [0491 4872 5399]: "A Brief Introduction of Some Principal Systems of Production Responsibility Now Practiced in China's Rural Areas]

[Text] In China's agricultural collective economic administration and management, how to mobilize the enthusiasm of the commune members and how to bring about the superiority of the collective economy are problems that have remained unsolved for a long time. Since the 3d plenary session of the 11th CCP Central Committee, along with the implementation of the rural economic policies and in proceeding from actual conditions, the vast numbers of cadres and commune members have liberated their thinking, boldly explored and established various forms of the agricultural production responsibility system in light of different levels of production, of management and of consciousness of the masses of the commune members. They have broken down the restrictions of tolerating only one formula for collective economic management and have basically overcome the drawbacks of eating "from the same big pot" and "doing things in a massive and unplanned way" in production, thus arousing the enthusiasm of the commune members for production and achieving remarkable results.

Up to now, more than 90 percent of the production teams in the rural areas throughout the country have introduced one after another different forms of new production responsibility systems. Generally, the production teams which practice the responsibility system of contracting a job to be done in a certain period of time with remuneration according to quotas are becoming fewer and fewer while those following the system of remuneration according to output are increasing in number. Of the systems in which remuneration is according to output, those fixing output quotas for each special line of production, fixing output quotas for every able-bodied laborer, fixing output quotas for individual households, and the system of peasant households assuming full responsibility for task completion and others are on the rise while the system of fixing output quotas based on a group is decreasing.

The System of Fixing Output Quotas for Each Special Line of Production With Remuneration According to Output

The system of fixing output quotas for each special line of production with remuneration according to output is also called "four specialities and one link," that is, in light of the local natural resources, labor resources and the conditions of technology and the development of production, and in accordance with the principle of unified administration under the teams and of sharing out the work and cooperating with one another, the production teams assign the production targets of agriculture, forestry, animal husbandry, sideline production, fishery, industry and commerce to specialized teams, specialized groups, specialized peasant households and specialized laborers under a contract system by linking remuneration with output according to the local conditions. The basic characteristic of this system is to contract production targets in different trades in accordance with the principle of specialization and division of production and with the special skills of the laborers. A laborer who is expert in agriculture can get a contract on farmland according to his ability; he who is skilled in various trades and professions of forestry, animal husbandry, sideline production, fishery, industry and commerce can contract production targets in various trades according to his special skills and ability. Thus everyone can do his best in his work and be responsible for his own job. Whether the various operations in process of production are to be carried out in a centralized or decentralized way depends on the situation. The fixed quota production under a contract will go to the unified administration. When production is in excess of or below the output quotas the contractors are rewarded or penalized. The various economic targets contracted between the production teams and the contractors should be in a contract which should not be changed for a year or several years.

This kind of production responsibility system can both give scope to the advantages of the unified administration of the collective economy and satisfy the demands of the commune members for linking remuneration with output and for practicing the principle of more pay for more work. The implementation of this system in the economically developed regions will be conducive to the improvement of labor productivity and commodity rate of products and to the further development of the diversified economy, thus enabling the agricultural collective economy to advance toward specialization and socialization step by step.

The System of Fixing Output Quotas for Every Able-bodied Laborer with Remuneration According to Output Under the Unified Administration of the Production Teams

The main outstanding feature of the system of fixing output quotas for every able-bodied laborer with remuneration according to output under the unified administration of the production teams is that plots of land are contracted out according to the labor force and farm work is done in both a centralized and decentralized way. The main characteristic of this responsibility system is that on the condition of upholding the "three no-changes," the production teams assign the "four unifications" and "five fixed awards with rewards and penalties" to each able-bodied laborer. What is meant by the "three no-changes" is that no changes should be made in the collective ownership of the means of production, in the principle of to each according to his work and in the production teams still being the basic accounting unit. The "four unifications" refers to the unified plans for planting, unified administration in using the collective draught animals and large and medium-scale farm machinery and implements, unified management of water and efforts to combat natural disaster and unified accounting and distribution.

The five "fixes with rewards or penalities" means a fixed labor, land, costs, output, renumeration with rewards for exceeding the quotas and penalties for failing to fulfill them. In carrying out this responsibility, according to the principle of adapting measures to local conditions and the wishes of the masses, the following systems can separately be exercised, such as the system of fixing output quotas in all crops for individual able-bodied laborers or the system of fixing output quotas for a single crop for individual able-bodied laborers or the system of directly fixing output quotas for individual able-bodied laborers or the system of fixing output quotas first for a group and then for individual able-bodied laborers.

The system of fixing output quotas for individual able-bodied laborers is adaptable in fairly vast circumstances. Ordinary production teams can follow it, and after their diversified economy has developed and their production projects have increased in variety, they can advance to the system of fixing output quotas for each special line of production. While introducing the system of fixing output quotas for individual able-bodied laborers in farm production, it is necessary to diversify the economy in forestry, animal husbandry, sideline production industry and commerce in ways suited to lcoal conditions and establish the corresponding responsibility systems according to actual conditions. Those production teams which are able to carry out the system of fixing output quotas for each special line of production can practice it; those unable to do so can introduce the system of fixing output quotas for a mixed line of production, or the system in which output quotas (or output value), income, costs, profits, payment and rewards or penalties are fixed and the income is shared proportionately, or the system of handing over the [assigned] profits to higher authorities under a contract or handing over the money for workpoints.

The System of Fixing Output Quotas Based on Households

Under the prerequisite of unified leadership, unified planning, unified accounting and unified distribution under the production teams, the system of fixing output quotas based on individual households is an agricultural production responsibility system which assigns the greater part or the whole cultivated farmland to peasant households and in which production is carried out basically by individual peasant households in accordance with the method of fixing output quotas, investment and workpoints with a reward for those over fulfilling the output quotas and a penalty for those failing to fulfill theoutput quotas under a contract. The contracts for collective cultivated farmland are decided by the commune members through democratic discussions. The plots of land are divided according to the method of a combination of family members and able-bodied laborers or according to the number of members of a family. As commune members, the cadres of the production teams similarly can contract for the land. In order to encourage family planning, more plots of land can be contracted to commune members with an "only one child certificate." Whether or not the production brigades' cadres, the locally run schools' teachers, barefoot doctors, casual laborers, contract workers and the commune and brigade-run enterprises' personnel should contract for the land and how many plots of land they should contract for should be decided by the commune members through discussions. In dividing the cultivated farmland to be contracted, it is necessary to first fix the output quotas of the land before they are assigned to the various peasant households under a contract, so as to make sure that the contracts will promote production. In fixing the plots of land to be under contract, it is necessary to pay close attention to such factors as villages and river systems--the closer, the better. The quality of the soil should be taken into consideration and yields adjusted accordingly. In order to maintain the continuity of production and to benefit soil fertility, the contract period of the land should be comparatively stable and remain unchanged for a certain period of time. The commune members have the right to only use the land which they contract; they are prohibited from buying or selling it. Collective-owned draught animals can be assigned to fixed peasant households at unified price to ensure both the capital and its value and can also be turned over to the peasant households after the price is fixed and the money for the purchased draught animals is collected in installments and put into the accumulated funds of the collective, or the production teams can especially assign persons to manage and use the draught animals, thus exercising unified farming. The production teams can also assign specialized individuals to manage and use the large and medium-scale farm machinery and implements or assign them to specialized individuals under a contract.

The regions which have been for a long time in a state of poverty and backwardness and where the masses have demanded the adoption of the system of fixing output quotas based on individual households have followed this production responsibility system, thus resulting in a noticeable increase both in production and income.

Quite a few regions which adopted the system of fixing output quotas based on individual households and the system of peasant households assuming full responsibility for task completion have very quickly solved the question of having enough to eat and wear. After gradually acquiring surplus money, they have jointly raised funds on their own accord to start new production projects and moved on to a new economic integration.

The System of Peasant Households Assuming Full Responsibility for Task Completion

The system of peasant households assuming full responsibility for task completion is an agricultural production responsibility system in which the production teams assign the cultivated farmland to peasant households for farming under a contract and assign the draught animals and farm implements to the fixed peasant households for their management and use and practice management by individual peasant households. The basic characteristic of this system is that after the state and the collective deduct a percentage of output originally agreed upon, the surplus products go to the individual. In the term of the masses, that is "to hand over the fixed amount of output originally agreed upon to the state and the collective to the full and retain whatever surplus there might be." Compared with the system of fixing output quotas based on individual households, this form gives the commune members more direct economic benefits. In introducing this responsibility system, the production teams generally formulate the plans for planting the major crops in a unified way. The large and medium-scale farm machinery and water conservancy facilities are generally put under the unified management and use of the teams. The industrial and sideline production suitable for the collective management are put under the unified administration of the teams. The production teams should in general divide the goods for farm use which are supplied to them by the state among the peasant households who then will buy and use the goods. The concrete way to contract out the land, draught animals and farm implements are basically identical with those of the system of fixing output based on individual households. In addition, apart from fulfilling the various output quotas to be handed over to higher authorities, the various peasant households under a contract must carry out a certain amount of compulsory service, service in farmland capital construction and other necessary collective work. Generally speaking, the compulsory service should be alloted according to labor force. The service in farmland capital construction should be divided in accordance with the acreage of cultivated land under contract or in accordance with the labor force. It is necessary to give favored threatment to the martyrs' and armymen's families and disabled armymen according to the stipulations of state policy. Supplies for the households enjoying the five guarantees should be ensured in accordance with the living standard of ordinary commune members. In making arrangements, appropriate preferential treatment should be given to families with material difficulties.

The System of Fixing Output Quotas Based on Groups with Remuneration According to Output

The system of fixing output quotas based on groups with remuneration according to output is also called "the system of guaranteeing output, workpoints and production costs, with a part of extra output as reward" or "five fixed with a reward." Under the prerequisite of unified leadership, planning, accounting and distribution under the production teams and in light of the needs of production, the production teams are divided into several working units. They will separately undertake field work under a contract. The production teams fix the output quotas (or output value), workpoints and production costs for the working units under a contract. The fixed quotas portion under a contract is put under unified distribution and the portion in excess of output quotas is turned over to the contractors as reward; the contractors who fail to fulfill the output quotas will be penalized.

Most of the production teams which are relatively large adopt this responsibility system. Because the work forces are organized into smaller groups, the quality of production can be watched more closely. This helps the commune members to concentrate on collective production and also helps launch competition among the working units to increase production and boost income. The shortcomings are that if no earnest attempt is made to record workpoints according to fixed quotas, egalitarianism will still emerge among the working units, thus turning the "same big pot" into the "same big sub-pot" and the practice of "doing things in a massive and unplanned way" into that of "doing things in a small and unplanned way." The responsibility and interests of this system are not so direct as those of the other forms of the system of assigning responsibility with remuneration according output.

The System of Contracting Out a Job to be Done in a Certain Period of Time with Remuneration According to Quotas

The system of contracting out a job for a certain period of time (or certain seasons) with remuneration according to quotas is a production responsibility system which fixes only the jobs but not output quotas for the contractors by linking remuneration with the quality of labor.

It works on the basis of having worked out the farm production quotas and in accordance with the requirements of production plans, the production teams assign part of the operation or the tasks of some operational items to groups, individual able-bodied laborers and peasant households under a contract by fixing the number of laborers, quantity, quality, time limits and workpoints. After the fixed output quotas are fulfilled on time, the production teams must check and accept the fulfilled output quotas. Those which are qualitatively acceptable will earn the workpoints originally agreed upon, and those which are not qualitatively acceptable must be made up a new or a corresponding reduction in workpoints will be made. Some regions contract out the continuous operation of the whole field management by linking reward and penalty with output.

After the cooperative transformation of agriculture, many units which had been run comparatively well adopted the system of contracting out a job to be done in a certain period of time with remuneration according to quotas. Provided the norms of labor and the standards of quality are rationally fixed and the fulfilled tasks are checked and accepted strictly in accordance with the requirements of quality, this system is fairly effective in overcoming egalitarianism and promoting agricultural production. But this system must be further improved so as to make its responsibility more definite and linked more closely with the economic interests of the laborers.

The above-mentioned systems are some principal systems of production responsibility now practiced in China's rural areas. Along with the establishment of these responsibility systems, the masses have demanded the establishment of responsibility systems among the cadres in charge of production, the technical departments which give directions to production and their personnel. At present, many regions are practicing the job responsibility system with definite duties by linking reward and penalty with workpoints and with the fulfillment of major economic targets through assessment. The method of using popular technical measures to get practical results is practiced among the technology popularization departments and their personnel by signing contracts which stipulate the rights and obligations and conditions for reward and penalty between the technology popularization departments and the producers.

The units introducing the various forms of production responsibility systems generally sign economic contracts, thus making the responsibility systems more practicable and enabling both parties "to be reassured." These contracts have legal effect. Both parties have to carry them out accordingly. Where special conditions (such as natural disasters) are encountered, the demand of any party to revise the contracts will be fulfilled after consultation and agreement between the two parties.

Ours is a vast country. The conditions in various fields vary greatly. In establishing the production responsibility systems in various localities, communes, brigades and teams, we must proceed from the actual level of the development of production, from the wishes of the majority of the masses and from the different natural conditions and different characteristics of production to make an appropriate choice suited to the local conditions. We must not "find a single solution for diverse problems" and not carry out a single pattern by fast and rigid regulations. The emergence of the various production responsibility systems means China's socialist collective economic management has entered a new stage. Along with the further development of production, new conditions and new problems will surely arise demanding our prompt study and solution for the continuous perfection of China's agricultural production responsibility systems.

CSO: 4007/91

DEPUTY DIRECTOR OF STATE AGRICULTURAL COMMISSION DISCUSSES AGRICULTURAL ECONOMICS

Beijing NONGYE JINGJI WENTI [PROBLEMS OF AGRICULTURAL ECONOMICS] in Chinese No 10, 23 Oct 81 pp 7-9

[Article by He Kang 0149 1660]: "Step Up Research in Agricultural Economics and Training of Agro-Economists"]

[Text] Chairman Mao pointed out very early that the economy consitutes the foundation and politics is a concentrated manifestation of the economy. Policies, plans, systems, and prices etc. must all have economics as their foundation if they are to be accurately formulated. If we want to make production relations commensurate with productivity, we must study production relationships and productivity. However, under the many years influence of "leftist" ideology, agricultural economics was brought to ruin. If one were to say that agriculture was the hardest hit household in a hard hit disaster area, then agricultural economics was the hardest hit spot in the hardest hit household. During the "Great Cultural Revolution," of the 32 institutes in the Chinese Academy of Sciences, only the Institute of Atomic Energy was kept and only the Institute of Agricultural Economics was eliminated. The other institutes were transferred to a lower level. But the Institute of Agricultural Economics did not even have sufficient status to be reduced to a lower level. For many years we have prattled about politics, paying no attention to economics. And even when we talked about agricultural science, technology was emphasized and economics slighted, production emphasized and management slighted. As a result, many of our policies have lacked scientific data accumulated over a long period of time. Take prices, for instance. This is a very large problem. But how are prices arrived at? One minute someone says that unless prices go up people won't grow soybeans, and so someone is sent out to investigate and write a flock of reports. Prices rise 20 fen. But after a little while, someone says this will not do either. One problem is solved only to have another crop us. This is no way to do things. This method does not establish long term study of productive labor and the laws of value to accumulate a data base; therefore, this kind of work should be effectively strengthened. Moreover, we feel that numerous problems have to be studied comprehensively, and numerous technical measures have to be reflected in economic results. Economic brains are needed in every undertaking. Even in science and technology, economic brains are needed. Nowadays many people who study agriculture feel the study of economics is essential, and that without it a production structure for large scale agriculture and strategic planning cannot succeed. In order to intensify research in agricultural economics, experts in agricultural economics will have to participate in and make recommendations about the major decisions pertaining to national agricultural development strategy. On the one hand, our work has to be integrated, and on the other leaders have to create conditions whereby everyone can understand circumstances, and they have to organize and investigate. In some future major agricultural decisions, everybody's advice should be sought on aspects relating to agricultural economics.

Two points are to be made in this regard. The first point is enhancement of investigation and research work on agricultural economics. State Agricultural Commission leaders give fairly heavy attention to this matter, and we want to propose topics for organization in this regard, be given necessary funds, and be given support in all ways. This work requires, first of all, fixed site surveys to look into some fundamental situations in agriculture, and long term, systematic accumulation of data to put into computers in the future for use as data in the formulation of policies. We would like to use 50 counties as base points. At the present time, the State Planning Commission and the State Statistical Bureau are already operating many points, each of them separately operating investigation sites on the basis of their own individual needs. We think that first a look should be taken at where the needs are greatest, after which everyone is organized for a common effort. More important is that a large amount of data has been worked up, but this data has not been well analyzed or applied. The main problems are these. The need to organize forces to propose topics and make good use of these materials, I regard as a priority problem. After returning, we can study to find relevent units to do this work. Second is the need to do specialized surveys. I feel that the six proposals that have been put forward have been worked up well. I have looked at several of the materials, and those special surveys on the structure of agricultural production, costs of production and prices of agricultural products, based as they are on the actual situation in 11 counties, are rather good. At the same time, it seems not enough analytical study has been done. The data from these 11 counties is fairly abundant, yet no complete analysis has been done. Therefore, specialized investigation and research on these several aspects has to be continued. For example, in the investigation of the structure of agricultural production, one aspect is qualitative. Each county has an urgent need about whether cotton should be paramount or whether something else should be paramount. Take the case of Liaocheng in Shandong Province, for example. Here the state requirement is not for commodity grain but for cotton, so grain fields to provide grain for local consumption are the only grain fields planted. Last year when I visited Liaocheng, I had a discussion with leading comrades in the Prefecture CCP Committee as to whether consumption grain fields could be contracted out for grain production, grainfields and cotton fields being of equal number in a shouldering of both cotton and grain production with the initiative being derogated to the peasants. Some of the money earned from the growing of cotton could be applied to the grain fields. As per unit grain yields increased, some of the grain fields could then be devoted to the growing of cotton, and when a lot of grain became available in the markets in the future, it could be bought, and even more of the grainfields could be devoted to the growing of cotton. This is operation of the laws of value. Another aspect is quantative, i.e., proportions within agriculture with future internal agricultural proportions being set according to resources and zoning. Another aspect is the production structure; still another is the crop pattern; and still another is the system of farming. All must be planned out macrocosmically at first, varieties, fertilization etc. being able to play a role only later on. In places not suitable for the growing of cotton, it would be a mistake to plant cotton, and twice the work for half the benefit would be required in the control of insects and in further spreading of fertilizer. Only by first solving macrocosmic problems can full benefits be derived later on in the microcosmic economy. Therefore, these problems must be well studied. For example, recently Comrade Yao Ban [5069 6721] proposed, on the issue of relationships among the state, the collective and individuals, solution to the problem of lightening the peasants' load. Right now peasants have numerous burdens, and these problems should be studied and solved. So, these problems have to be continued to be worked at, and we will organize later on to give attention to specific points of importance. The system of responsibility for production is a large topic, and a major point in the future. We must study this topic well. For example, how, in view of the characteristics of China's agriculture, to make the system of responsibility work and scientific management work. Recently we had a team visit the United States to observe the agricultural economy, their observations centering on family farms. American agricultural production is very modernized, but its dominant structure is the family farm with 1.5 workers per farm. There are somewhat more than 3.7 million farm workers in the country on somewhat more than 2.3 million farms, each farm averaging 2,600 mu of land. Why is there such a high degree of mechanization? In America today, the farms are either very large or very small; medium size ones are not numerous. Furthermore, a single person can raise more than 100,000 chickens, and this is also a man and wife business. But the feed company provides them with chicks, feed, and innoculations. Within 2 months, or about 56 days, they grow to maturity for eating and are hauled away as a group to be slaughtered, and a new batch of chicken is supplied the farmer for raising. The United States has family farms under socialized conditions, while China has large scale contracting of work under unified leadership, which is able to tap the enthusiasm of both the collective and individuals. Naturally, the two social systems are fundamentally different. There are many lessons to be learned in this, and henceforth there is a need for intensified study of the system of responsibilty and scientific management.

Below are listed several topics for study.

First, the need to intensify economic study of agricultural resources, things like economic problems in aquatic resources, and rural energy problems. Rural energy sources are of eight kinds: firewood forests, methane gas, small hydropower stations, small coal mines, wind power, solar energy, the tides, and geothermal energy. In the many regions of the country, what are the economic benefits of these for each region? This poses many problems requiring study.

Second, regional economic research. China has some key development areas, and it also has some key regions to bring under control. Some of these are problems in comprehensive development of drought, waterlogged, and saline-alkaline areas in the Huang, Huai, and Hai river areas, conservation of water and soil in the loess highlands, development of the Sanjiang Plain, development of mountain regions in the south, etc.

Third, the technological economy, particularly the economic benefits of investment. Just where should the focus of our future investment be? The economic benefits deriving from various technological measures such as chemical fertilizer, water conservancy, mechanization, etc. all require study.

Fourth is study of the economy of private retention. This means study of private plots, private mountains, people engaged in private pursuits, and household sideline occupations. One of the main reasons for the liveliness of agriculture in Hungary is that the economy of private retention is fairly well developed. Its economy of private retention covers 10 percent of the cultivated land and accounts for one-third of all agricultural products, and 44 percent of the output value of agriculture. Benefits from private plots is great. Output from private plots in China is double or several times that from large fields, and there are cases in which people earn as much as 1,000 yuan from a private plot. Therefore, the economy of private retention merits study. Study of the private retention sector of Hungary's agricultural economy is one of the key points for study. A private retention economy has been organized, but China has processing, state provided technicians, specialized farm fairs, and a collection of facilities that can be a needed supplemental part of the socialist economy, and should not be allowed to be dissipated. Recent data show that the volume of trade done in China's agricultural fairs during 1980 was 2.3 billion yuan, almost double the 1.2 billion yuan of 1979. Of the total, 66 percent was from dealings in chickens, ducks, fish, pork, and vegetables. The rural economy was enlivened and skilled craftsmen emerged.

Fifth, a series of economic problems in commune and brigade enterprises, rural industrial sideline occupation production, construction of medium size and small cities and towns, and the equipping of large, medium, and small enterprises require study.

Sixth, how best to solve problems under present circumstances in agriculture, industry, and commerce, particularly as to the area of circulation of products and development of a commodity economy requires study.

Seventh is the problem of rural finance and banking, which is an important one. In the capitalist world, in any given year the amount of credit is about equal to output value. In the United States during the past several years, farm credit has amounted to more than 100 billion annually, 20 percent of its federal or state, and the remainder being private. In China, however, farm credit in any given year amounts to 10 percent of the output value of agriculture. Rural credit must be handled well. In future, some of China's capital construction expenses for agriculture and for public utilities can be financed through credit, for a steady turnover. There is need, as well, to study world finance and how to use in agriculture foreign capital provided under preferential conditions. There is something to be learned here too. We have to study World Bank and United Nations agricultural development fund credit methods.

Eighth is pertinent economic research and forecasting in the sphere of strategy for agricultural development, including forecasts for development in the year 2000 as well as forecasts of current year outputs. Comrade Weng Yongxi [5040 3047 2569] and comrades in the Chinese Academy of Sciences used regression formulas in computers to make some output forecasts for 1981, which were provided to leaders for their reference, and which have been very helpful.

Ninth is economic questions about agricultural products trade, such as how many dollars will have to be spent in a year for the importation of so much grain and cotton. Similarly, when we export farm products, there is a need to know that a great amount of rapeseed oil is in storage containing ericic acid. It will be difficult to export and the people do not like to eat it. Now a means will have to be found to substitute rapeseed oil for peanut and soy oil, so these oils may be exported. Currently more than 8 million tons of chemical fertilizer are imported. What should the ratios of nitrogenous, phosphate, and potassium types be? Phosphate and potassium fertilizer have to be imported, but is it better to import phosphate fertilizer or is it better to import phosphoric acid to make the phosphate fertilizer ourselves. China's markets are not isolated, but must be thought of in terms of markets throughout the world. Right now wheat is one of China's major imports, but the price of what has more than doubled during the past 20 years, going from several tens of dollars to $170 or $180. The price of corn has not gone up as much, less than double. The price of rice is almost double that of wheat, therefore adjustments have to be made in the varieties of grain imported and exported. There is also need to study how to expand exports of farm products, particularly of labor-intensive products.

Tenth is problems in the foreign farm economy. What experience have foreign countries had in the history of the development of agriculture that are worth borrowing.

Finally is stepping up the training of talent. Management is also a science. At the present time, administrators and managers in agriculture seem to be in short supply. In China, the proportions between industry and agriculture are out of balance. And in the training of agricultural talent, there is also a problem of proportional imbalance. Talent to conduct farm technology is, of course, insufficient; however the ratio is still fairly great while those able to manage the agricultural economy are few. Yesterday I went to have a chat with comrades in educational institutions and learned that there are slightly more than 20 institutions in the country that have special courses in agricultural economics. Right now there are more than 80,000 students enrolled in agricultural institutions of higher learning, but the number studying agricultural economics is probably less than 2,500. However, China now has more than 50,000 communes, 700,000 production brigades, and more than 2,300 counties and municipalities. Following reform of the Guanghan system in Sichuan Province, the director of the county rural work department went to the grassroots level as a manager of integrated agricultural, industrial, and commercial enterprises. He spoke animatedly about how to run this and how to do that. This manager really knew how to balance the books. At all the communes in which he served, output value from industry alone amounted to 18 million yuan. More than 10 industrial plants large and small and a lot of administration and management brains. By training a group of high level agricultural administrators and managers of this kind, the numbers would be very big, so this aspect needs strengthening. Furthermore, I am afraid that our courses in agricultural economics need revision. Formerly we followed the Soviet model, but many changes have taken place in our policies. Not enough is taught about this, and changes have already taken place in that, and there are new technologies too. We do not do enough teaching of computer technology or of linear programming and such new technologies. Therefore, there is a matter of reform in our specialized courses in agricultural economics as well. This problem is primarily the responsibility of leaders who should help educational institutions do this work. Right now a special meeting on agricultural economics is being held at Lushan; we shall see how this problem is solved after the meeting. In addition, I hope to be able to run some short training classes, lasting half a year or a year, for the training of personnel acting as managers. They should be the first group to be trained. Later on, this can be stepped up and there can be academic exhcnages with foreign countries to get things that benefit us.

(The third portion of a speech delivered by State Agricultural Commission deputy director, Comrade He Kang before the National Agriclutural Economics Problem Discussion Conference.)

4007/79

FORESTRY VICE MINISTER URGES AFFORESTATION OF PLAINS AREAS

Beijing ZHONGGUO LINYE [FORESTRY IN CHINA] in Chinese No 9, Sep 81 pp 6-8

[Article by Hao Yushan [6787 3768 1472], Vice Minister, Ministry of Forestry: "Survey of Afforestation of the Jiangsu-Shanghai-Shandong-Henan Plain"]

[Excerpts] During the past several years, heartening results have been achieved at various places on the Central Plain of North China combining unified planning of farmland capital construction, agriculture, forestry, and animal husbandry, and comprehensive administration of waters, farmlands, roads and forests in a large scale effort of greening of the plain, farmland forestry networks predominating. According to statistics, the farmland area initially networked with forests in the plains area of the three provinces and one municipality of Jiangsu, Shanghai, Shandong, and Henan amounts to 72.5 million mu, or 40 percent of the total farmland area that can be networked with forests. About 3.2 billion trees have been planted in the four besides [beside rivers, roads, field, and streams], and almost 20 million mu of farmland has been intercropped with tung trees. In some advanced counties that acted quickly and did a good job of tree planting, comprehensive shelter forest systems consisting of a combination of networks, strips, and tracts, in which farmland shelter networks predominate, have already been formed.

1. The Greening of the Plain Is Imperative and Holds Great Potential

Historically it has been the habit in China's plains areas to plant trees in the four besides and to intercrop persimmon, date, and walnut trees on farmland. In the past, large scale planting of trees was also no rarity. Reportedly, in the year that the emperor Yang Di [A.D. 605-617] of the Sui dynasty began the digging of the Grand Canal, he accepted the suggestion of his prime minister and ordered civilian laborers to plant numerous poplars and willows on both banks of the canal. Formerly people always thought that the mountains are for growing trees and farming areas are for growing grain." This was an unalterable principle as a result of which insufficient attention was given the planting of trees and afforestation of farming areas. Consequently the lack of forests and the scarcity of lumber in farming areas has continued to the present day. During the past several years, as a result of their experiences, the masses in farming areas on the broad plains have come to realize the importance of forests, and they have had a taste of afforestation of the plains. In the many places that I surveyed on this trip wherever afforestation of the plain had been done well, agriculture thrived, grain production went up, and the feelings of the masses of the people were settled.

How great is the potential of plains areas? A survey shows that the four besides and odd bits and pieces of land on the plains are equal to about 15 percent of the cultivated land area, and as high as 25 percent in individual places. The area on which trees can be planted amounts to about 10 to 20 percent of the cultivated land area (figuring 200 trees per mu). Even in the water-laced areas south of the Yangtze where land is scant relative to population, as in the 10 counties that comprise Shanghai's suburbs and in the southern part of Jiangsu Province, it amounts to between 7 and 10 percent or so. The vast plain washed by the Yellow River is suitable for intercropping of tung trees on farmland. If three or four trees per mu were planted, the numbers would be quite respectable. From forest reserves can be seen the great potential from afforestation of the plain. Shandong Province's forest reserves amount to 26 million cubic meters, 70 percent of them on the plain. Jiangsu Province's forest reserves amount to 15.12 million cubic meters, 75 percent of them in the four besides. Though great development is now occurring in afforestation of plains everywhere, it is unbalanced. There is unused potential both in places where afforestation is being done rapidly and where it is being done slowly. Places doing it well must continue to fill up the gaps, replace, and upgrade to tap a potential of 10 to 20 percent. In places that are doing it poorly, the potential is 60 percent in some places, and 70 to 80 percent in others. In Henan Province there are 16 million mu of vacant land in the four besides where 1.6 billion trees can be planted, but where only 1 billion have actually been planted. The farmland area that can be networked with forests amounts to 40 million mu of which only 15 million mu has been done. The area that is suitable for intercropping of tung trees amounts to 20 million mu of which only 13 million mu has been intercropped. In addition there is 5 million mu of saline-alkaline land, and 15 million mu of sandy land. In Jiangsu Province, the area of farmland amenable to forest networking is more than 60 million mu, of which somewhat more than 20 million mu has been completed. In Shandong Province, the area available for forest networking is 65 million mu of which 37 million mu has been completed; suitable for the intercropping of tung trees is an area of 18 million mu, 5.5 million mu of which has been so intercropped. Additionally there are 15 million mu of saline-alkaline lands, and 1.2 mu of sandy wastes. In the 10 counties that constitute the Shanghai suburbs, farmland forest networking has been done on only 500,000 of the 5.4 million mu of cultivated land. It may be seen that the potential for planting trees and afforestation on plains areas is very great. By strengthening leadership, giving close attention to the growing of seedlings, relying on policies, depending on science, and relying on the initiative and creativity of the broad masses of the people in a determined effort to make the plains green, results can be obtained within a short period of time.

2. With Afforestation of the Plains, Self-Sufficiency in Lumber Can Be Realized

Afforestation of the plains is the fundamental way to improve the distribution of China's lumber production and arrive at local self-sufficiency in lumber. When the plains are planted to trees, the forests grow fast, the investment is small, there is little expenditure of labor, and benefits are quick. Times till maturity are generally as follows: paulownia: 10 years; poplar: 15 years; metasequoia, pond cypress, larch, Chinese ash, white elm, chinaberry, tree of heaven, bastard acacia [Robinia psudoacacial], and willow: from 20 to 25 years. Measurements made in 1980 at the Zhouzhuang Production Brigade of Jiunu Commune in Chengwu County, Shandong Province showed 0.386 cubic meters of lumber being produced from a single paulownia tree that had been intercropped on farmland for 6 years. With the planting of three trees per mu, the amount of lumber produced would be more than 1 cubic meter.

Jiangsu Province has made some representative surveys as follows: Were every person in each county to plant 50 trees and maintain them to maturity, timber reserves per person might average as much as 0.5 cubic meters, which would be enough to achieve self-sufficiency in lumber. This is also the impression I received from seeing more than 100 communes or production teams that had put lumber self-sufficiency into effect. With a little more effort on the part of every county on the plains, attainment of this standard is possible. The counties I visited in Jiansu, namely Feng and Pei counties; in Shandung, namely Jinxiang, Yanzhou, and Dongming counties, and in Henan, namely Yanling and Xinzheng counties, all of which are advanced forestry counties, had done exactly this. If a county can realize self-sufficiency in lumber, why not a province? Shandong Province has made some fine calculations as follows: The plains area of the province is 70 percent of the total area, and 1,000 rural villages, railroads, watercourses, highways, and dry ditches are more than 50,000 kilometers long. The area on which forest networking of farmland can be put into effect amounts to 65 million mu, and another 18 million mu of cultivated land is suitable for intercropping of tung trees. Were all these areas to be forested, 5 million mu of timber bases built, and timber produced on small tracts of wasteland and in mountain areas, by the end of this century it would be possible for the province to realize self-sufficiency in lumber.

3. Numerous Advantages From Timbering of the Plains

Once forest networking of farmlands has developed, towering, dense forest belts will become a green screen protecting farmland, giving rise to a farmland macroclimate favorable for crop growth, and increasing capabilities to withstand natural disasters. Some people say that forest belts will put a strain on the land and reduce yields, but I do not believe this is so because in every county, every commune, and every brigade on the plains that I visited on this occasion, wherever farmland forest networking had been done well, increases in grain output resulted without exception. I will give just one example here. In 1977, the Wangzhuang Production Brigade in Guyang Commune, Lankao County forest networked all of its 1,150 mu of cultivated land. As a result of the protective function played by the forest network, plus other agricultural measures taken, that production brigade's grain output increased year by year. In 1977, it was 130,000 jin; in 1978, 180,000 jin; in 1979, 250,000 jin; and in 1980, 310,000 jin.

Places that have done a good job of planting trees on the plains annually prune enough branches to solve their fuel problems for 2 or 3 months, and the stalks and stems of plants saved thereby may be returned to the fields for composting into fertilizer to raise the soil's fertility. Furthermore, tree leaves are themselves a very fine source of fertilizer, and when the leaves fall to the ground in the fall, ground fertility increases. In addition, the leaves of certain trees (such as paulownia, bastard locust, poplar, white elm, and Salix sino-purpurea) make good feed for hogs, sheep, and rabbits. They may either be eaten green or sundried and pulverized for great promotion of livestock industry development.

With the planting of trees by villages and the forest networking of farmlands, the natural landscape undergoes change and environmental pollution declines. Everywhere the air is fresh and pure, and the summers are cool and pleasant, creating fine places in which people can rest and work. When people live in a green environment, they are happy and at ease and their physical and mental health improves.

As a result of survey and the acquisition of knowledge, we feel that one major experience in doing a good job of afforesting the plains has been implementation of policies for putting into effect of systems of responsibility for forestry production. I saw on this trip that not only had plains area collective forests developed, but as a result of implementation of policies, the initiative of individual commune members in planting trees was higher than at any time in the past, and the number of trees planted has also been unprecedented. Numerous commune member households have planted trees or have grown seedlings on their private plots. According to a survey, more than 50 percent of the tree planting in the four besides has been done by individual commune members. In Jiangsu Province, 620 million or 69 percent of the more than 950 million trees planted in the four besides have been planted by individual commune members. Concurrent with the implementation of policies, action by each jurisdiction on the principle of from each according to ability and to each according to work, making sure that the material well-being of individual commune members and the final fruits of labor are organically linked, the implementation of various forms of a system of responsibility, with adaptation of general methods to local situations from the propagation of seedlings to afforestation to care of the forests, with specialized contracting, linking the calculation of compensation to production, and several fixeds and one reward, as well as signing of contracts throughout so that forestry units and individual commune members have authority, responsibility, and benefits have given further impetus to development of forestry production. The masses of commune members say from profound experience: "People call people to work, but they do not work; policies arouse countless millions." Gezhuang Production Brigade in Taocheng Commune, Yanling County assigned individual sections and tracts to 14 forest protection personnel for them to manage. After contracting, each forest protector set up a hut at the edge of his area to protect the forest day and night, and to fertilize and water it as needed. The forest grew prolifically. Experience everywhere has demonstrated that once a system of responsibility for agricultural prodcution has been put into effect, if a system of responsibility for forestry follows closely, the problem of growing saplings can be solved; existing forests can be protected; and forestry production can continue to expand.

9432
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POSSIBILITY OF ORGANIC DRY FARMING IN NORTH CHINA EXPLORED

Beijing NONGCUN GONGZUO TONGXUN [RURAL WORK NEWSLETTER] in Chinese No 10, 5 Oct 81
pp 18-19, 27

[Article by Zhang Qinwen [1728 3084 2494], Shanxi Provincial Zoning Office, "Tentative Discussion of Strategy For Organic Dry Crop Agriculture in North China"]

[Text] The Magic Weapon That the Chinese People Have Given to the World

The northern region of China with the Yellow River Basin as its center was the birthplace of Chinese culture and the center in which agriculture production originated as well. Beginning in the Han dynasty and extending through the Wei and the Jin to the Northern and Southern dynasties, farming in the Yellow River basin gradually came to consist of plowing, harrowing, raking, and hoeing primarily, fertilizing with large amounts of manure, conservation of water and soil, the growing of green manure, rotation of crops, and a combination of use and nurture of the land in a farming tradition. This is what we today term the "organic dry farming" agricultural tradition, which for several thousand years has effectively withstood drought and prevented soil exhaustion. This is the magic weapon that the Chinese people have given to the world, and it is the fine tradition of farming that must be continued in the process of realizing China's modernization of agriculture.

Foreign Agriculture Faces Tremendous Difficulties

In one of its annual reports, the American Academy of Sciences said: The 1950's and 1960's were an age in which mankind was swollen with arrogance. Artificial satellites, spaceships, the landing on the moon, and the flight to Mars became realities one after another. It was though mankind could conquer all. But in the 1970's mankind suddenly encountered perplexity and confusion. He discovered numerous difficult problems such as population increase, shrinking resources and environmental pollution. How mankind could restrict his own unlimited expansion, sensibly use and renew natural resources and purify his living environment became the common concern of all countries. Consequently, study and establishment of an equitable strategy for agricultural development that has as its objective a highly efficient ecological system is urgently sought by all. People have begun to realize that the earth's soil is not something that can be used at will as one desires. Increase in grain output depends largely on increases in per unit yields, and in the advanced countries, the major elements in high agricultural output at the present time, chemical fertilizer, pesticides, irrigation, herbicides, and fuels to provide power, are all seriously dependent on petroleum and natural gas. The so-called "green revolution" that began in the 1960's and signaled development of new grain crops, faces tremendous difficulties as a result of the energy crisis.

What is the way out? In the United States, where chemical agriculture is advanced, farmers using an organic farming system have appeared. They use accumulated manure and crop stubble instead of chemical fertilizer, and they use rotational cropping and cultivation at the right times to guard against weeds, using little or no herbicides, which both cuts down on expenses and results in increased yields. Scientists who conducted a survey on behalf of the United States Department of Agriculture have an optimistic attitude about the future prospects of organic farming. With the splendid tradition of Chinese agriculture as a foundation, the learning of modern scientific techniques to establish agricultural development on a foundation of replenishment and renewal of natural resources so that the ecological environment will become better and better, and the soil more fertile the more it is cultivated, using a strategy of organic agriculture has enticing prospects.

Thirty Years of Tortuous Road

Since the founding of the People's Republic, we have always used the electrification, mechanization, the bringing of all farmland under irrigation, and chemicalization as depicting the prospects of China's agricultural development. In fact, in implementing technological strategy in which the "four modernizations" has been the goal and principal ingredient as well, this has been "industrial-engineering agricultural strategy." To place hopes for agricultural development on support from industry and engineering measures while ignoring biological principles, ecological laws, and agro-technology is very lopsided.

Take Shanxi Province, for example. For the past 20 years or more, investment in the mechanization of agriculture has amounted to 2.5 billion yuan. Number of tractors per mu of cultivated land average more than in the USSR, and are close to the levels of the United States at the time when it put into effect the basic mechanization of agriculture. Rural electric power use averages 22 kilowatt hours per mu, a world high. Investment in water conservancy amounts to 2.8 billion yuan, the irrigated area amounting to 27.6 percent of the total cultivated area, double the world average ratio. Chemical fertilizer use averages 53 jin per mu, effective ingredients converting to close those of the United States and the USSR "Industrialized conditions" in agricultural production have attained fairly advanced world levels. However, in afforestation and planting of grass, in the conservation of water and soil, in improvement of the ecological environment, in development of green manure, improving the soil, and increasing agro-technical levels, investment and support has been very little. Even now the forest cover rate for the province is only 7.2 percent, and soil fertility is steadily deteriorating. Cultivated soil in the province with an organic content of more than 1 percent exists on only one-fourth of the total cultivated land area. Elsewhere, the organic content is between 0.3 and 0.8 percent. A very great gap exists in the "ecological environmental conditions" and "soil conditions" for agricultural production as compared with agriculturally advanced countries. The level of agricultural production is very low, grain yields averaging only 332 jin per mu, and on the thin soils in half the province, yields are less than 200 jin per mu.

The root cause of impediments to China's agricultural production are, of course, leftist mistakes; however, failure to take opportunities in technical strategy for the development of agriculture is another major reason. In their book, "Report of Observations of the Agricultural Situation in Taoyuan County," the famous Tokyo University professor Tamura Saburo [3944 2625 0005 6745] et al noted that Chinese technicians suppose that use of composted manure and such organic fertilizer is "out of date," but this is a kind of errant modernism. I feel this criticism is very much to the point. For the past 30 years, China has ignored the modernization of "soil conditions" and biological techniques inherent in agricultural production, investing heavily and using great technical forces on conditions external to agricultural production--"industrialized conditions"--and this has indeed been "errant modernism." Quite a few high output areas lose money through farming, becoming high output poor brigades. China's "organic farming," so vaunted abroad, is really a case of seeming better than it really is.

Bringing Into Play the Role of Soil and Reservoirs.

Per unit crop yields are determined to a very great extent by soil fertility. Analysis by a group of agricultural specialists and economic management experts showed that on a scale of 100 for the various technical factors effecting agricultural output, the soil factor (including fertilizer) would amount to 60. Therefore, for high yields in agriculture, it is necessary, first of all, to foster fertile soil.

Fertile soil is able to store a large amount of moisture and nutrients, and is able, when weather conditions are bad, to continue to supply the water and nutrients that crops need. It is an automatic ecological system.

Thin soils have an organic content of less than 1 percent; their slaked layer is only 15 to 20 centimeters, and the volume of moisture and nutrients they can carry are greatly affected by external temperatures and humidity. Their moisture and nutrients are used up fast. To assure bumper harvests, one will have no choice but to irrigate and apply fertilizer to the crops frequently, increasing the amount of human regulation and control. If this human regulation and control falters, disaster in the form of a drop in output will follow.

In many parts of North China, most of the precipitation is concentrated between July and September. During the spring season, when water is crucial, little rain falls, so the most basic way in which the problem of dry conditions is solved is to parcel out for use the rain that has fallen during other times of the year, storing summer and autumn rain for use the following spring. Which is the better road to take, "accumulation of water in projects' or "letting the soil store water"?

It must be recognized that in North China areas that get little rainfall, hopes that construction of water conservancy facilities will fundamentally solve problems of drought, and expectations of increased amounts of man-made rain or regulation of the distribution of rainfall during the course of the year will continue to be difficult to achieve, given the current state of science and technology. Take Shanxi Province, for example. Forecasts call for development in the near future of an irrigated area that will serve only 30 percent of the cultivated area. The basic situation in mountainous regions of North China and throughout the entire loess plateau area are similar to those in Shanxi. Of course, water conservation that should be built should continue to be built; however, we should not devote attention solely to this. Large scale increase in fertilization with organic fertilizer to increase the soil's organic content, and the adoption of farming methods to combat drought can increase the ability of the soil to store water, accumulating the copious rains of summer and autumn to satisfy the needs of the spring season to solve the problem of most of the rainy season taking place at a time other than when the crops need rainfall most.

A report by the Shanxi Water and Soil Conservation Institute of the Chinese Academy of Sciences says that soil from the loesslands that has undergone improvement to increase its fertility has a water carrying capacity of 200 to 300 milliliters per meter of topsoil, and is able to store most of the rainfall for a long time, putting autumn rain away for spring use. Thus, this soil may be regarded as a "soil reservoir," possessing the valuable traits of "no dryness in the earth when the heavens are dry." Calculations made as a result of survey and study done in Shanxi show that improvement of soil fertility, plus timely summer plowing under of summer crop stubble and cultivation of autumn crops, permits each mu of cultivated land to hold 130 cubic meters of water. If this were achieved on the 40 million mu of drylands in the province, 5.2 billion cubic meters of water could thus be stored. This amounts to six times the volume of water stored in ordinary years in existing reservoirs throughout the province. This moisture stored in the deep layers of the soil can stabilize the quantity of moisture in the cultivated soil layer. Measurements made at the Zhongliang Brigade in Xiangfen County show that following improvement of fertility, dryland wheatfields that used cultivation techniques for combating drought had a cultivated layer water content of between 2 and 3 percent more than in the same type of infertile wheatfields. By practicing farming techniques for combating drought on its dryland millet fields, even under the serious drought conditions of the spring of 1965, the quantity of water in the cultivated layer of the soil preliminary to sowing at the Jinzhuang Brigade in Huguan County was 4.2 percent higher than in control fields, guaranteeing emergence of seedlings for a full stand.

In fertile drylands, the production efficiency of water is greatly increased. Measurements taken at the Dongguanzhuang Brigade in Wenxi County, Shanxi Province show that for every millimeter of rainfall on dryland wheatfields with an organic content of more than 1 percent, 1.36 jin of wheat was produced. On infertile wheatfields, however, output was only 0.52 jin. The former was between 90 and 160 percent higher than the latter. Representative examples of consistently high yields from drylands in North China convincingly demonstrate the extremely optimistic prospects for using water stored in soild for dryland farming. After improving fertility and practicing farming methods to combat drought, Dongguanzhuang Brigade in Wenxi County, Shanxi Province harvested yields of more than 300 jin per mu for more than 10 years in a row from almost 1,000 mu of drylands. Yields of more than 800 jin per mu of millet were harvested from large areas of drylands in Jinzhuang Brigade, Huguan County. At the Guandaoliang Experimental Farm in Wangjiagou operated by the Shanxi Provincial Water and Soil Conservation Institute, 71 mu of terraced grain fields produced yields averaging 530 jin per mu over a period of 20 years, the highest yield averaging 991.6 jin per mu in 1976. In the severe drought year of 1965, yields still averaged 327 jin per mu. At the Siyaoxian Brigade in Ansai County, Shanxi Province, terraced cornfields produced yields of 1,000 jin per mu. In the great drought year of 1977, yields still amounted to 700 jin per mu.

In some agriculturally advanced foreign countries, except for the United States where dryland crop farming predominates, development of agriculture has also taken the dry route, as in Canada (where the irrigated area is 1.1 percent of total cultivated area), in France (3.0 percent), and in Yugoslavia (1.8 percent). Experience both at home and abroad has demonstrated that dryland farming is by no means "agriculture dependent on the heavens," nor is it tantamount to extensive planting for meager harvests. It is a form of consistently high yields with fairly low requirements.

The Technical Strategy of Acting According to Capabilities

Organic dry farming strategy is both a long term strategic goal and the best short term way of going from low yields to high yields and of transforming poverty into prosperity. It is a strategy requiring little investment, great output and optimum technical and economic benefits. It is a realistic strategy of acting according to capabilities. The main ways of carrying out this strategy are as follows:

First leveling the soil. In addition to doing a good job of afforestation, planting grass, and soil and water conservation, hillside fields must be built into flat terraced fields; raised fields and dams must be built in ravines; small plateaus have to be built up at the bends of streams; and flatlands have to be made into gardens.

Second is massive fertilization with organic fertilizer to increase the soil's organic content. Vigorous efforts should be made to develop a livestock industry using stalks and stems to feed the livestock and livestock manure to fertilize the fields. Major efforts in methane gas production, and the spread of techniques for using solar energy. Building of a civilian coal burning supply network. Encouragement of tree planting by commune members to increase firewood. Implementation in places where there is a lot of land relative to population of private mountain and private hillside policies for the creation of more firewood forests. Great growing of green manure for a revival and carrying forward of the traditional system of crop rotation. In watery areas, development of aquatic green manure. Centralized processing of urban garbage and sewage to produce fertilizer. Intense attention to research and development, production and supply of organic bacterial fertilizer, humic acid fertilizer, agents for increasing soil temperature, and agents for improving soil structure.

Third, deep plowing and a series of farming techniques to combat doubt, to hasten improvement in soil structure and properties, balancing water, fertilizer, air, and heat in the soil, making fullest use of latent soil fertility, and increasing the ability of the soil to store water and conserve moisture.

Fourth, vigorous promotion of drought resistant crops and breeding of superior drought tolerant varieties.

Fifth, sensible fertilization. A good job of regular soil surveys and diagnoses, acting to replensih soil nutrients that are particularly deficient.

9432
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DU ZIDUAN ON IMPORTANCE OF RURAL ENTERPRISES

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[Text] Beijing, November 18 (XINHUA)--China's rural industries and enterprises employ ten percent of China's rural labor force but account for one third of the total income of rural collectives, according to the Ministry of Agriculture.

Du Ziduan, vice-minister of agriculture and concurrently director of the ministry's general bureau of rural enterprises, said that the rural enterprises have become a principal source of income for the peasants. A survey shows that almost all the well-off communes and production brigades in China have got substantial benefits from their own rural enterprises. On the rural outskirts of Shanghai and some parts of Yangtze River delta where such rural enterprises flourish, about half of the annual income received by the peasants from the collectives comes from this source.

The vice-minister said that the rural enterprises provide jobs for surplus rural labor force. Some 30.5 million people are now employed by the rural enterprises.

The rural enterprises produce small-sized farm machinery and tools, chemical fertilizer, pesticide, cement and process agricultural produce and by-products. They also make light industrial goods and handicraft articles and engage in planting tea and fruits, raising poultry and livestock, and in building, transportation and service trades. In 1980 they turned out nearly 10,000 varieties and specifications of products.

Rural enterprises comprise an important component of China's industry, the vice-minister said. In 1980, the total industrial output value of the rural enterprises amounted to 10 percent of the country's total. In the same year they turned out eight percent of the nation's total export volume.

Rural enterprises on the outskirts of Beijing, Shanghai, Tianjin and other major cities have become an indispensable adjunct to state-owned, large industrial enterprises, producing and processing machine parts for them.

The total output value of rural enterprises amounted to 61,400 million yuan in 1980, 22 percent higher than that in 1979; and in the first half of this year, it rose by another 10.4 percent.

The growth of rural enterprises promote the development of small towns, he said. With the establishment of manufacturing and processing industries, educational and recreational facilities, shops and other catering services, thousands of rural settlements have become townships where the residents are engaged in both industry and agriculture.

Three million peasants work in rural building enterprises and factories producing building materials to meet the growing needs of peasants to build new houses.

The rural enterprises accumulate funds for agricultural production, the vice-minister added. During the period from 1978 to 1980, rural enterprises, while setting aside funds for their own expansion, provided 7,600 million yuan for construction of water conservancy works, purchasing farm machinery and aiding economically backward production teams.

China's rural enterprises have been set up and developed since the 1960's, with funds raised by rural communes and sub-divisions in developing rural collective economy.

Since China has abundant natural resources and rural labor force and a big domestic market, said Vice-Minister Du Ziduan, rural enterprises have bright prospects of development.

CSO: 4020/29

ADVANCED RURAL PRODUCTION BRIGADES URGED TO AID BACKWARD UNITS

Beijing NONGCUN GONGZUO TONGXU [RURAL WORK NEWSLETTER] in Chinese No 10, 5 Oct 81 pp 2-3

[Article: "Effectively Help Advanced Brigades Continue Their Forward Advance"]

[Text] This issue of this magazine has presented two surveys of the steady progress in the midst of reform by the Liming Production Brigade in Heilongjiang Province and the Baizhuang Production Brigade in Henan Province. The experiences of these two brigades demonstrate that even in advanced brigades in which the collective economy is fairly well run, it was necessary to undertake reform in a seeking of truth in facts in order to further increase the enthusiasm for production of commune members. This is a major matter affecting the consolidation and development of the socialist collective economy in rural communes, and CCP committees at all echelons should devote extreme attention to summarization and promotion of the experiences of advanced brigades in reform, effectively helping them to continue their forward advance.

Nationally, advanced rural production brigades currently number about 30 percent of all brigades. These advanced brigades possess the following common characteristics: Production conditions have undergone remarkable change; both production levels and the commodity rate are fairly high; and commune member living standards have considerably improved. Under the leadership of the party, these brigades have long hewed to the socialist road to triumph over various hardships and expand agricultural production, increase the public accumulations of the collective and the income of the peasants, to improve the livelihood of the masses, and to provide the state substantially more agricultural byproducts. They have made a major contribution and played a model leadership role in developing the collective economy, and in helping build socialism, and have demonstrated the superiority of socialism in rural areas.

Of course, advanced is only a comparative term. Because of the influence of leftist errors and the as yet imperfect rural socialist economic system, egalitarianism and eating out of a "large common pot" exists in various degrees in advanced brigades. Also existing is single crop economies, poor management, large expenditures, low economic benefits, insufficient democracy among cadres; and taking more than one's share. The commune members' burdens are quite heavy. All these things act to restrain further arousal of commune member initiative and the development of productivity. They must be reformed. Since the Third Plenary Session of the 11th Party Central Committee, and particularly since implementation of Central Committee Document Number 75, with the establishment and perfection of systems of responsibility for production, rural villages have been facing a situation of thoroughgoing reform of the economic system. Numerous poverty stricken and backward brigades, or those in an intermediate state, have been able to make a fresh start within a year once they have carried out reform. This has also sounded the alarm bell for advanced brigades. Without further reform, advanced brigades may turn into backward ones. As some advanced brigade cadres said, "Poverty stricken and backward brigades are on uncertain ground. Unless we improve further, we will become backward." The reason that advanced brigades have been advanced has been their steady innovations. We place our hope in advanced brigades raising high the banner of reform under new conditions, quickening the development of agricultural production, vigorously developing the commodity economy, and continuing to play a model leading role.

The situation differs from one leading brigade to another, and so the requirements for reform and the means of reform cannot be uniform. However, judging from the situation reported from everywhere, the emphasis should be: Continued overcoming of egalitarianism with distributions according to work; reform of the single crop economy, and development of diversification; putting an end to extravagance and waste and increasing economic benefits; improvement in cadre work style, and close relationships between cadres and the masses.

Egalitarianism is a negation of distribution according to work. In order to further implement the principles of distribution according to work and greater gain for greater work, it is necessary to continue to surmount egalitarianism and to acknowledge the commune members' material interests. On how well the method of distribution according to work is perfected will depend whether from each according to ability will be promoted. If this method is able to advance from each according to ability and increase commune member sense of responsibility for the collective economy, production will rise; earnings will increase; commune members' material interests will be satisfied; and they will be even more concerned about development of the collective economy. A proper mix of collective benefits and individual benefits are the driving forces in development of the collective economy. We cannot only stress the collective economy while ignoring the individual welfare of commune members. The key to overcoming egalitarianism lies in the establishment and perfection of a system of responsibility. Today about 7.75 percent of all advanced brigades in the country practice systems of responsibility of specialized contracting and linking of planned production to calculation of compensation. Under unified administration, these systems of responsibility practice specialized division of labor and combine, in an equitable way, workforces and the means of production to help commune members be masters in their own house and make the most of their abilities. From another standpoint, in calculating labor and reporting for compensation purposes, the recording of workpoints on the basis of output or output value, and the direct linking of how well a commune member did his work to the final fruits of labor, which can be seen and touched, the more the work the greater the gain, effectively surmounts egalitarianism and eating out of a "large common pot." Step by step establishment and perfection of systems of responsibility of specialized contracting and linking production to the calculation of compensation, and the use of these methods as a starting point for continued progress, is a correct course for advanced brigades in undertaking reform.

Without reform of the single crop economy, further increases in output or earnings will be extremely difficult. One of the major reasons why expansion of production is not very fast in some advanced brigades is that for a long period of time, a preponderant amount of attention has been concentrated on a limited amount of cultivated land, while virtually all of the cultivated land is devoted only to the growing of grain crops. There is little concern for real conditions, no calculation of production costs, and no questioning of economic benefits. As a result, though grain output increases, diversification is pushed aside and earnings drop. This is a lesson that must be learned. On the basis of local resources, overall planning must be done taking all factors into consideration, and crop patterns layed out in a sensible way. Without any relaxation in grain production, avenues of production must be widened, diversification launched, and commodity production expanded. To launch diversification, both collective and individual initiative must be brought into play. While practicing unified administration, active encouragement and support must be given individual commune members to develop household sideline occupations. In accordance with the spirit of instructions from the Central Committee, and by adapting general methods to local situations, appropriate enlargement of private plots and fields for the growing of livestock feed may be done, and some of the underemployed and auxiliary labor force not engaged in collective labor may be permitted to devote themselves solely, insofar as is possible, to household sideline occupations.

Reform of administration and management to increase economic benefits. Looked at from the outside, there presently seem to be certain limitations on increase in advanced brigade economic benefits, as, for example, the great price scissors between agricultural and industrial products, which adds, in every way, excessive burdens to the collective economy. Some cadres say, "Right now, we're flogging a running ox; the more advanced we become, the more we suffer." This is not without reason. These external problems naturally require gradual solution. Nevertheless, in another sphere, poor management greatly hobbles development of the collective economy. In the capital construction of some farmland, formalism, extravagance and waste exist. Production is done without calculating costs; there is no concern about economic accounting; financial management is in a shambles; effectiveness from investment in farm machines, chemical fertilizer and irrigation is very small, and production costs mount as high as 50 to 60 percent. Production increases but earnings do not. Commune members say, "Gladdening output, frightening expenditures, and disappointing distributions." This situation urgently requires change. In order to arouse further commune member concern about the collective economy, concurrent with perfection of systems of responsibility and the practice of diversification, must be attention to financial restructuring, institution of democratic money management; broadening sources of income and reducing expenditure, frugality in operation of communes, strengthening of cost accounting, perfecting capital and fiscal management systems, putting a stop to extravagance and waste, and endeavoring to derive the maximum economic benefit from the minimum expenditure.

Improvement of cadre work style and cementing relationships between cadres and the masses are conspicuous problems that must be conscientiously solved in the process of reform. The reason advanced brigades are advanced is that they have a group of good cadres (including labor models) who are a fine team eager for collective endeavors. They do not fear difficulties in work, and they have played a very good role in leading the masses in arduous pioneering work. This spirit should be preserved and carried forward. At the present time, commune members everywhere report heavy burdens. This is not a problem peculiar to impoverished and backward brigades, but one that exists in advanced brigades as well. There are many reasons why commune members' burdens are heavy, but this problem is also closely connected to the unhealthy tendencies of some cadres. Some cadres do things undemocratically and unfairly. They use the authority of their positions for private advantage, take more than they are entitled to, and participate but little in collective labor. This state of affairs merits arousal of close attention. Advanced brigades should devote effort and take the lead in changing cadre work style and in cementing relations between cadres and the masses. Communes should be run democratically with important brigade matters being discussed and decided by commune members, commune members being allowed to take charge. "Better staff and simpler administration" should be practiced, the number of cadres and non-productive people enjoying subsidies not being too numerous, subsidies not being overly high, and specific ways of doing things being discussed and approved by commune members. Cadres should be educated to participate in labor and not selfishly and indulgently place themselves into sideline occupations. They should not entertain guests and send gifts, and they should not take more than their fair share of anything, but rather diligently and conscientiously take care of things for the collective and handle matters for commune members. Only when cadres and the masses are as one can advanced brigades give a good account of themselves and be able to develop their skills to the full.

Leadership of advanced brigades can only be strengthened; there can be no relaxation. One situation presently meriting attention is that some leadership cadres dare help impoverished and backward brigades or those in an intermediate position, but regard advanced brigades with a different eye, fearing that people will say their mentality is not emancipated and thus not daring to render assistance. This is obviously wrong. The situation in advanced brigades differs from that in impoverished and backward brigades, and the ingredients of reforms also differ. No kind of a system of responsibility can be made absolute. One should act in accordance with the spirit of the Central Committee directive, emphasize action in accordance with realities, practice tailored guidance, and dare straightforwardly to render support and assistance to advanced brigades. All levels of leadership should, as always, regularly go into advanced brigades to help them act according to realities, to summarize experiences, to seek out deficiencies and steadily improve. Right now it is necessary to give particular attention to advanced brigade experiences in reform. Only by giving attention to reform can advanced brigades win through in reform and steadily advance!

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IMPETUS GIVEN TO IMPROVED MANAGEMENT OF WATER CONSERVANCY PROJECTS

Beijing NONGCUN GONGZUO TONGXUN [RURAL WORK NEWSLETTER] in Chinese No 9, 5 Sep 81 pp 2-3

[Article by Special Commentator: "Stress Management; Limit Construction Within Capabilities; and Make Farmland Water Conservancy More Effective"]

[Text] Dryness and little rain continued in the North China region this spring, and during the summer the greatest flooding since the founding of the People's Republic occurred in the upper reaches of the Yangtze River. Serious natural disasters have sorely tested water conservancy projects. The struggle in various places to resist drought and withstand floods has made us realize, on the one hand, that the arduous struggle by the entire party and all the people during the past more than 30 years, and the large numbers of water conservancy projects built through self help have indeed played a tremendous role in the struggle against calamity. On the other hand, however, it can also be seen that our existing water conservancy projects and facilities are a very long way from being able to satisfy needs in guarding against floods, getting rid of waterlogging, for irrigation, and for water in cities, the countryside, industry, and daily life. In many places, capabilities to withstand natural disasters are still very weak. Consequently, we must proceed from consolidation of existing water conservation projects, and while improving conditions for agricultural production, strengthen management, adapt general methods to local situations, give tailored guidance, and act within capabilities for active and effective development of farmland water conservancy construction.

In terms of the present, shifting the focus of water conservancy work first to management is, on the basis of the current overall policy of readjustment of the national economy and the realities of water conservancy construction, a major decision and one that is fully necessary. We have already constructed a large number of water conservancy projects, and we possess a substantial water conservancy foundation. However, for a long time under the guidance of leftist ideology, construction was emphasized while management was slighted. The erroneous tendency toward many projects and few benefits was never fully resolved. In numerous projects that have already been constructed, full benefits were never attained, and in some projects continuous damage was done as a result of poor management, and benefits declined. Some projects have never been completely fitted out, and they have not seen normal use for a long period of time. A large quantity of inspection data from everywhere shows that for identical projects, benefits vary greatly depending on how well they are managed. No matter whether the average amount of water used per mu in irrigation areas, or the amount of electricity (or petroleum) expended per thousand meters by machine and power drainage and irrigation stations, or the area watered by pump wells or simple wells, benefits differ one or two fold or even more than 10 fold depending on whether the facilities are well or poorly managed. Were about one-half of the country's irrigation area irrigation stations and pump wells to effect a strengthening of management, recondition, fully equip, level fields, and use water scientifically to bring benefits from irrigation up to existing levels in units having advanced management, the irrigated area of the country could be increased by 100 million mu and a great saving realized in petroleum and electric energy. This would be equal to the new construction of several hundred large and medium size irrigation areas and machinery and electric drainage and irrigation stations. Therefore, good management, good use, and proper fitting out of existing projects and facilities is the way to save expenses and increase benefits. Strengthening of management requires attention to democractic management, specialized management organizations, and mass management, working in close combination with specialized management organizations and making sure to heed the needs of the masses in irrigation areas and the views of irrigation area representatives. It requires attention to economic management, with diligent promotion of a system of personal responsibility in all tasks that includes responsibility, authority, and benefits, rewards commensurate with work, and issuance of rewards and penalties. It requires attention to technical managment, doing things in accordance with natural laws, assuring project safety and completeness of facilities, promotion of scientific use of water, tapping of unused potential, and steady increase in benefits.

When we speak of placing the emphasis of water conservation work on management, that is certainly not to say that there should be no further construction of new water conservancy project. In places where the water conservancy foundation is weak, development of agricultural production slow, and guaranteeing safety from floods urgently needed, there must continue to be planned, step by step operation of new water conservancy projects; however, these problems must be solved gradually on the basis of the country's financial ability, the economic benefits to be realized, and after weighing the advantages and disadvantages and the priority to be assigned. As far as small farmland water conservancy projects are concerned, so long as a need exists in production, and so long as the masses want them, provided they are within the capabilities of communes and brigades, the masses should be actively organized to carry them out. But technical guidance must be intensified, economic accounting instituted, attention given to adaptation of general methods to local situations, and tailored guidance given. For example, some places can fill in gaps to further increase capabilities to combat drought or waterlogging disasters; some places require replacement, with all possible speed, of projects destroyed by water; and some places have a weak water conservancy foundation and require emphasis on construction, etc. In short, action should be taken on the basis of needs and capabilities. There most certainly should not be any "arbitrary uniformity" or blind direction.

The Sixth Plenary Session of the 11th Party Central Committee called upon us to "unite and struggle to build a socialist and modern powerful nation." Farmland water conservancy is an important material foundation for development of agricultural production, and an indispensable condition for the building of modern agriculture. Farmland water conservancy construction is not a matter of what should or should not be done, but rather a matter of how best to do it and how best to use it. No matter whether looked at in terms of problems revealed in this year's drought and flood situation or in terms of the need to prepare for further development of agriculture in the future, gradual accumulations fromlabor to operate farmland water conservancy projects is both possible and completely necessary.

On the basis of the aforementioned requirements, farmland water conservancy work this winter and next spring requires, first of all, strengthening of the management of existing projects and facilities, restructuring and strengthing of management organizations, building and perfecting a system of rules and regulations, adaptation of general methods to specific situations in the promotion of various forms of a system of responsibility, closely linking the responsibilities, authority, and benefits of managers, and overcoming the method of operation whereby one could eat out of "a large common pot" no matter whether managment was done well or poorly. There must be effective achievement of management by specialists of large and small projects, and of ditches, ducts, wells, pumps, and stations. In regard to the problems of grassroots managerial personnel and commune water conservancy personnel that await solution, various different ways should be found in an effort to solve them rapidly and well. Every effort should be made to use local advantages to develop diversification and achieve self-sufficiency with some surplus. At the present time, management of drainage ditches is an even weaker link, and numerous ditches are in a state of management by no one. Sluice gates have been erected in them at random, and silting is serious. Emphasis should be given this autumn and winter to solving this problem.

Secondly, there should be planned, step-by-step annual repairs, desilting, installation of equipment, prevention of leakage, restoration to safe operating condition of projects damaged by water, leveling of soil, and helping commune and brigade members build, insofar as their capabilities permit, small farmland water conservancy projects. No matter whether in equipping, continuing construction, or building of new projects, a good job of surveying and planning must be done. The hydrological, geological, and agricultural production situations must be understood, making sure that the water resources are available, that there are no geological problems, that a need exists for agricultural production, and that there is no conflict between the upper and lower reaches of waterways. When this has been done, plans should be drawn up and design and construction organized. In the process of organizing for construction, policies should be conscientiously put into effect and the principles of equitable burdens, exchanges at equal value, and payment of compensation according to work adhered to. There should be no practice of egalitarianism and indiscriminate transfer of resources, no great uproars, and no eating out of "a large common pot." From the very beginning of construction, management work should be placed on the daily agenda. In the process of construction, it should be quality first, careful organization, and careful construction. Before the project is completed, action should be taken to set up a management organization. Management personnel must have a part in the approval and acceptance, must strictly maintain continuity in procedures, and establish project files. Until the project has been completed and fully equipped, construction units may not withdraw, and management units have the right to refuse acceptance on the basis of relevant regulations.

Third, meeting new situations in rural villages and solving new problems. Following the Third Plenary Session of the 11th Party Central Committee, with the implementation of rural policies and the institution of various forms of a system of responsibility for agricultural production, very great changes occurred in rural villages. These changes, brought new problems for water conservancy construction, particularly for farmland water conservancy construction. In some places where a system of linking output to the workforce, contracting production or work with individual households was instituted, organization to work on water conservancy repair became more difficult than formerly: raising of funds became more difficult; and problems of land use for projects became more difficult to solve. In some places instances occured in which wells were filled in, ditches were leveled and water conservancy destroyed, water conservancy machinery and electrical facilities being divided up and sold. Investigation of these situations has shown that the key element lay not in rural institution of a system of responsibility, but rather that our water conservancy management work had no corresponding way of keeping pace. There was no active promotion of farmland water conservancy management and a system of responsibility for projects. Instead old, stale work methods continued to be used. In some other communes and brigades, following contracting for production with individual households, management of water conservation facilities was abandoned. Naturally this resulted in damage and losses at water conservancy projects. Experiences at numerous places shows that once rural villages instituted a system of responsibility for production, had leaders only given serious attention, taken prompt action, and used commensurate management methods and measures with regard to water conservancy, not only would they have been able to insure completion and normal use of existing projects and facilities, they would also have been able to effect new development of farmland water conservancy construction. After rural systems of responsibility for production were established in Jianyang Prefecture, Fujian Province, a new atmosphere of "three more and three less" emerged in water conservancy projects, by which is meant more adaptation of general methods to local situations and taking reality as the point of departure, and less blind and chaotic action and raising a big hue and cry; more respect for commune and brigade self-determination, and less resort to commandism and coercion and issuance of blind direction; institution of a system of responsibility for water conservancy management with more of the contract system, and less eating out of a "large common pot." In short, whenever we strengthen leadership, use vigorous measures, adroitly guide action according to circumstances and maximize benefits while minimizing disadvantages, no matter whether in the institution of any form of a system of responsibility for production, farmland water conservancy construction and management work are done somewhat better. Effective and workable ways that each jurisdiction has gradually summarized as the result of experience during the past 2 years with systems of responsibility and the contract system for water conserancy may be spread elsewhere, and constantly perfected and improved in the course of actual work.

Fourth, this winter and next spring advantage should be taken of the current period of readjustment to give attention to various basic tasks and the work of the previous period, and close attention should be given the formulation and reform of various systems, creating conditions for future development of farmland water conservancy construction. At the same time, great effort should be made for planned, incremental training of cadres and workers to raise their political quality, their professional levels, and their technical levels. This is a kind of major capital construction that must on no account be neglected.

Most parts of the country today have entered the season of the year that favors building of water conservancy. There are the three periods of before and after the autumn harvest until it becomes very cold, and following the lunar New Year until spring planting. Arrangements can be made in a planned way for winter and spring farmland water conservancy work, to do comprehensive planning, to strengthen leadership, to adapt general methods to local situations, and to act within the limitations of capabilities to actively and steadily do a better and more effective job of farmland water conservancy construction in the spring and autumn.

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EFFECTS OF SHADING DURING DIFFERENT STAGES OF GROWTH ON RICE YIELDS

Guangzhou GUONGDONG NONGYE KEXUE [GUANGDONG AGRICULTURAL SCIENCES] in Chinese No 5, 8 Sep 81 pp 1-5

[Article by Mao Bijun [3029 3880 0689], Lou Yonghai [2869 3057 3189], Yu Jinquan [0151 6651 3123], Huang Chilin [7806 3589 2651], and Lao Xiaoming [6351 2556 2494], Rice Institue, Guangdong Provincial Academy of Agricultural Sciences: "Effects of Shading at Different Periods on the Filling Out of Grain in Rice Varieties Following Full Heading"]

[Excerpts] The fruiting rate of rice is determined primarily by the intensity of photosynthesis after heading inasmuch as between two-thirds and three-fourths of the material in the filled out grains is the product of photosynthesis after heading. Recent research done by the International Rice Institute also attests that a decrease in light during the maturation period leads to a decline in the fruiting rate, and a drop in yield.

At the present time, the period of heading in most rice growing areas of Guangdong Province is concentrated around mid-June. This is the time of the "dragon boat rain" weather, which means rainy, overcast days and scant sunshine, which very greatly impairs the filling out of the grain. The heading period for late rice is concentrated in early or mid-October. Historically the weather has been clear and bright during this period, but in the last 10 years, as a result of the startling increase in the arrival in Guangdong of autumn typhoons, much overcast and cloudy weather has resulted, and this is also one of the reasons leading to inconsistent late rice crop output. Present technology makes a change in the weather rather difficult, but effects of the weather can be thwarted or avoided by production patterns and planting techniques. The pattern of varieties planted constitutes a major method. Sensible juxtaposition of varieties that mature at different times for a readjustment in the seasons has been widely used for some time in production. However, the effect on the filling out of the grain of light conditions following heading, and the difference in reaction among varieties maturing at different times is still not clear. Therefore, this experiment has set up varieties maturing at different times and varied light deprivation following full heading to study the different reactions to the deprivation of light on the filling out of grain in varieties maturing at different times in order to provide date for techniques that can make the most of advantages and avoid disadvantages for consistently high yields.

Discussion

(1) The results of the experiment in which yield fell as a result of a decline in fruiting rate when light intensity was reduced following full heading were identical to those obtained in previous study by others. However, the extent of drop in yields among varieties with different periods of maturation was different. Early crop late maturing rice variety "661" showed fairly light decline in yield; medium maturing and medium-late maturing variety "Guichao No 2"; "Zhenzhuai No 11" and "Shanyou No 2" were second; and early maturing variety "Guangluai No 4" showed greatest decline in yield. The reason was that shading for early maturing varieties following full heading had a fairly large affect on photosynthsis. This was manifested in striking decline in both the fruiting rate and the per thousand weight of grain. In addition, the in-the-milk and maturation stages were short, and the compensatory function during the late stage of maturation was not evident. In addition, the quantity of nutirent material stored in the stems and sheaths of early maturing varieties during the early stage was slight, and the quantity of stored material circulated following heading was not great. It was greater in late maturing varieties. Conversely, the material stored in the stems and sheaths of "661" and "Guichao No 2", and such medium and late maturing varieties was circulated in fairly large amounts. In addition, during the in-the-milk and ripening periods, the compensatory function during the late stage was evident, and thus the extent of decline in yields was fairly light.

Among late crop varieties that mature at different times, the drop in yields was most serious in late maturing variety "Erbaiai," the main reason being that when "Erbaiai" was shaded after full heading, the increase in dry weight of panicles was strikingly slower than for other varieties, and both the fruiting rate and the per thousand weight declined noticeably. It may be seen that varieties of the "Erbaiai" type have rather strict requirements for light during the in-the-milk stage. Secondly, it may be that the fairly low temperatures during the in-the-milk and grain plumping stages, resulting from the fairly late heading of "Erbaiai," had something to do with this.

(2) Analysis of many years of weather data shows that except on Hainan Island at the Leizhou Peninsula, in most regions of Guangdon Province, the "dragon boat rain" weather is concentrated mostly around mid-June. Because of the ill effects of the "dragon boat rain" weather, in addition to the concentrated rainfall during the first, second, and third five day periods of June, the quantity of solar radiation and hours of sunshine are both at a low level, lower by an average of one-fourth to one-fifth as compared with the fourth, fifth, and sixth 5 day periods. Differences in the duration of "dragon boat rain" weather from one year to another are even more striking. Therefore, by readjusting crop seasons and suitably increasing the proportions of intermediate and late maturing varieties planted, such measures being correlated to actual local conditions, the heading and in-the-milk stages of early rice can largely avoid the ill effects of the bad "dragon boat rain" weather.

A look at the results of this experiment shows that following shading of late maturing varieties of late crop rice, the extent of decrease in yield was fairly great. Consequently, in terms of making the most of advantages and avoiding disadvantages, and in terms of the orientation of future breeding of varieties, early and medium maturing varieties of late crop rice should be selected for growing, and an advance of their heading stage to between late September and the first 10 days of October would be rather favorable. However, in most parts of Guangdong Province today, late maturing varieties still predominate in production, and until problems with consistently high yields from early and late maturing varieties are solved, reliance will have to be placed on regulating the growing season through early sowing and early transplanting so as to get early full heading. This will not only help extend the vegetative growth period in local fields and avoid the "cold dew wind", but will also, in the event of overcast and rainy weather during the heading and in-the-milk stages, help increase the compensatory function during the in-the-milk and grain plumping stages, reducing loss of output.

(3) The reduction of yields occasioned by the diminution of sunlight following full heading, can be reduced and compensated, to a certain extent, by improved planting techniques. Such techniques include increasing the vegetative growth period in fields, guarding against over fertilization with nitrogenous fertilizer, proper sunning of fields in mid-season, enhancing the storage of nutritional material in stems and sheaths before the period of full heading, and increasing the circulation of nutrients toward panicles following full heading.

Second, attention must be given to preservation of root and leaf functions during the late stage, to lengthening the in-the-milk and grain plumping stage, and to increasing the compensatory function of the late stage as effective means.

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FURTHER DEVELOPMENT URGED IN FISH CULTURE

Beijing NONGCUN GONGZUO TONGXUN [RURAL WORK NEWSLETTER] in Chinese No 8, Aug 81 pp 20-21

[Article by the investigations group of the National Bureau of Aquatic Products: "Key Points in Developing Freshwater Fish Culture"]

[Text] Some time ago, we went to eight countries in the four prefectures of Huanggang and Jinzhou in Hubei Province and Hengyang and Yueyang in Hunan Province. We investigated fish culture in farm villages at key points and felt profoundly that we will have a stable and reliable foundation if this big business of fish culture in farm villages and the development of the entire freshwater culture can be grasped well.

Potential of Cultivating Fish in Ponds Is Great

Fish cultivation in farm villages is mainly fish cultivation in ponds. Except for the few large mountain regions in Hubei and Hunan, almost every brigade has several large and small ponds and most of them are suitable for developing fish cultivation. The area of ponds in the two provinces, according to statistics, is 1.5 million mu in Hubei and 2 million mu in Hunan. The actual area is much larger.

The rate of utilization in the two provinces is about 80 percent, but the number of ponds used for raising and cultivating fish is small. In most cases, fish are released in the ponds at the beginning of the year and harvested at the end of the year, but the fish are not fed or taken care of in the meantime, "people release the fish and let the heavens cultivate them." The unit area yield is very low. But in those units where fish have been cultivated conscientiously, there has been multiple increases in the yield. The eight counties now all have a group of communes producing a per mu yield of over 300 jin, brigades that produce over 500 jin, and production teams that produce over 1,000 jin.

The 30,000 mu in Xishui County in Hubei has a per mu yield of 280 jin. The 46,500 mu in Qidong County in Hunan produce nearly 260 jin per mu. These places can produce a relatively high yield because the leadership has emphasized fish cultivation and the enthusiasm of the masses in fish cultivation has heightened.

Fish cultivation in farm villages utilizes presently available water surfaces; it does not occupy cultivated land; it does not need massive investments for construction; it does not use massive amounts of food grains and feed, and it is beneficial to promoting the production of food grains. The ponds in farm villages generally are all within the territory of one team, the ownership and user's rights are all clear, and they are easy to manage. The water surface area is small and suitable for fine cultivation, also the production techniques are not difficult to grasp. The cost of cultivating fish in ponds is low, the results are quickly realized and the gain is great. It is indeed an important way to develop diversification. The Xincun Brigade of Guankou Commune did the following calculations: In cultivating 1 mu of fish, the net income of the collective is equivalent to that from 2 mu tea plantations, 1.8 mu of dryland and 2.8 mu of paddy ricefields.

Implementing and Perfecting the Production Responsibility System in Fish Cultivation

The development of cultivated fish production during the last 2 years is mainly the result of the policy and responsibility system that mobilized the people's enthusiasm. The Hengyang Prefecture established the production responsibility for fish cultivation in three stages of development. The first stage was the development from lacking management for a long period to assigning permanent and special personnel to feed and cultivate fish. The collective proposed production goals, and the commune members engaged in fish cultivation and equally divided the labor. Those with outstanding production records after democratic evaluation were given appropriate rewards at the year's end. The second stage was marked by the initial implementation of linking production with remuneration. The popular form was to assign special personnel to contract the work, several quotas were established for rewards and punishment, the proportion of rewards and punishment was generally not large. The third stage was marked by open bidding for contracts instead of cadres assigning special personnel to contract the work on the basis of the several established quotas. Most contracted work was fully rewarded for completion or fully punished for failure. The specific makeup of the three stages is in fact the three main forms at present. In addition, there is another major form of pure gain contract (big contract). The contractor submits a definite amount of product or cash each year according to the contract and is responsible for profit and loss while the collective does not exercise any control. The main forms of fish cultivation in other regions are mostly one of these four types. Regardless of which form, they all mobilize the enthusiasm of the producers. Increasing the yield benefits the collective and the individual. For example, the Guanshan Brigade of Dongshan Commune in Huarong County has 77 mu of ponds. Before 1977, per mu yield was only 20 jin. Since 1978 when production was contracted, increased yields were realized year after year. In 1980, the total yield reached 24,700 jin, per mu yield was 320 jin, an increase of more than 14 times over 1977.

Similar cases have occurred in every county. In the past, cultivation of fish in ponds made no progress over a long period, average per mu yield always stayed below 100 jin. Even after some units with better production reached 200 to 300 jin, the yield still lingered without increasing. But as soon as the production responsibility system was implemented, water remained water but the yield changed. The situation of units with protracted low yields suddenly changed and the units with lingering production also advanced one big step.

Many cases show that implementing the responsibility system in fish cultivation and production is a policy that is extensively supported by the masses. But, because of the constraints of the leftist ideology for many years, the basic level cadres and masses still hold from habit various influence and ideological worries; they fear policy changes and fear the emergence of a wide gap between the rich and the poor. Especially in regions where the foundation of fish cultivation is poor, because of lack of experience, too low or too high basic quantities of contracted production easily result in the emergence of large rewards or severe punishments. Therefore, at some places, some problems exist in implementation. For example, some brigade cadres are inconsistent and do not fulfill contracts. Some fish cultivating commune members who receive more rewards in a year do not dare to accept the contract the next year, or are not able to continue to contract for the work, instead they ask for less rewards or use their rewards to invite others to banquets or buy television sets as gifts for the collective. There are also other commune members who are jealous of the rich and oppose fish cultivating commune members who continue contracting for the work.

Family Cultivation of Fish Is a New Emerging Force

Urged by the policy of the party Central Committee to encourage commune members to develop family sidelines, fish cultivation by commune member families has developed very rapidly. In some regions, family cultivation of fish has already become an important supplementary part of freshwater cultivation and production. Last year, family cultivation of fish in Hubei Province had already developed to 256,800 families, constituting 3.2 percent of the total number of farm families. In Hunan Province, statistics for the first quarter of this year showed that the area for the cultivation of fish by families constituted 2.5 percent of the area of ponds used for cultivation.

Developing family cultivation of fish is very significant in increasing the income of commune members and increasing the quantity of commercial commodities. But, it is different from hog-raising and fowl-raising, both of which require large areas and sufficient water sources and they are not enterprises that can be carried on in all regions or that can be operated by all farm families. Therefore, in development, measures must be suited to local circumstances and attention must also be paid to unified planning and arrangement by the collective. In lake regions where there is more land and water surface, the development will be fast. In hilly regions where there is less land and water surface, development is slow. Even in regions where development is fast, actual situations also differ. Jiangling County basically cultivates fish by digging ponds in private plots. Huarong County basically divides waste ditches not utilized by the collective among families for rebuilding and utilization. These situations, besides being related to the size of the population, land and water surface, are also related to the level of utilization at present of the water surface at each locality and the foundation of production of fish cultivation. In regions where the conditions are favorable, fish cultivation should be allowed to develop without limitations, and commune members should be actively encouraged to develop family fish cultivation. In regions where there is less land and water surface, fish cultivation should not be overly emphasized.

Conscientiously Solve the Actual Problems in Cultivation

(1) Continuing to correct the influence of the leftist mistakes and placing fishery in a position it should occupy is still the first problem. Now, the neglect of fish

cultivation and production has indeed been changed. But the degree of understanding by each locality, the degree of emphasis and the determination vary greatly. Nationally, there are still some provinces and regions that until now have not been lined up for such work. The lower echelon comrades have asked the leading party and administrative departments truly to emphasize the utilization of water surfaces in the same way they have emphasized cultivated land and to grasp farm village cultivation of fish in the same way they have grasped the cultivation of foods grains and hogs.

(2) We must strengthen guidance and training in fish cultivation techniques. Our nation's farm villages have a long history and rich experience in fish cultivation. But, among the broad number of farm villages throughout the nation, the basic knowledge of production is still lacking. Now, that the trend of developing fish cultivation in farm villages is strong, the masses crave for technical guidance. How to create more effective methods to do this work well under presently available manpower conditions and financially allowable conditions is still a problem that requires study and solution.

(3) The supply of superior breeds must be well organized. Since the 1950's when artificial propagation techniques of domesticated fish made its breakthrough, incubation of fish fry has become basically popular throughout the nation. The present problem is a widespread degeneration of species, mixed breeds and the concentrated use of only a few species in actual production, few specifications and poor quality because of uncontrolled development and the lack of planning and management. In the future, specialization and fixed point production and supply of propagation of fish fry and allowing the production units to cultivate their own breeds of fish should gradually be implemented. The state should grasp well the major superior breeds and the original breed bases, and it also should help the few counties that have a definite water surface for fish cultivation, but at present still cannot propagate fish fry, to establish fish fry breeding farms and stations. We should strive to change the present situation of cultivating whatever is released in most of the water surface for fish cultivation and we should realize a rational combination of species and after several years of efforts cultivation of superior breeds and large species.

(4) We must grasp well rebuilding of ponds. For many years, construction of ponds has been neglected. A small part of the original ponds has been filled, and most ponds have not been repaired for many years. The production team should be mobilized to rebuild ponds in stages so that the water is deep, the banks are wide and the ponds can be drained and irrigated. These will be a benefit in storing more water to resist drought and also improving conditions for fish cultivation, killing two birds with one stone.

9296
CSO: 4007/27

MOUNTAINS DESIGNATED TO MEET PERSONAL NEEDS

OW132153 Beijing XINHUA Domestic Service in Chinese 0059 GMT 13 Nov 81

[Report by XINHUA correspondent Shen Yuandi]

[Excerpts] Beijing, 13 Nov (XINHUA)--Efforts have been made to stabilize the ownership of mountains and forests, to designate mountains to meet personal needs and to establish the responsibility system in forestry (hereinafter, these are called "three things unchangeable" for short) in 1,446 counties of the country's 26 provinces and autonomous regions.

As a result of the efforts to realize the "three things unchangeable," the enthusiasm of the cadres and masses in growing saplings and planting trees have been greatly aroused. In Shandong Province's Laiwu County where a better job has been done in this regard, more than 40,000 able-bodied persons prepared over 40,000 mu of land for planting trees during this year's rainy season, overfulfilling their plan by more than 100 percent.

In Neijiang Prefecture, Sinchuan Province, flood lands that are suitable for planting trees have been assigned to households for this purpose. The prefecture has issued a regulation under which peasants grow saplings and plant trees on those lands and enjoy the benefits from their such effort. Then, more than 150,000 jin of cypress, eucalyptus and other tree seeds were quickly gathered. After fulfilling their original plans for growing saplings, peasants in the prefecture grew additional saplings on 10,000 mu of land.

In Shaanxi Province, 4.2 million mu of mountains (including waste beaches) were designated as mountains for meeting personal needs, and trees were planted on 1 million mu of them in the same year.

As a result of the efforts to realize the "three things unchangeable," excessive felling of trees has been effectively stopped and the protection and management of forests have been strengthened. Meanwhile, some localities have strengthened their management of forests in accordance with the law, have promptly and severely punished those committing crimes in destroying forests and have hit hard at speculators and profiteers.

In the efforts to make the "three things unchangeable," many localities have seriously handled disputes over mountain forests, thus promoting stability and unity. According to preliminary statistics by eight provinces, more than 58,400 disputes over the ownership of mountain forests have been handled.

According to incomplete statistics, 13 provinces and autonomous regions have sent work teams of more than 165,000 persons to basic-level units to help them realize the "three things unchangeable."

However, there are still some problems in this regard.

1. The development of this work is uneven. A few localities have not yet made experiments in this regard; some localities have done so but have not promptly popularized their experiences.

2. Relevant policies are not accurately grasped. A considerable number of localities are too strict in designating mountains to meet personal needs, and some even do not designate mountains to meet personal needs at all. But some others are too generous in doing so and give commune members whatever mountains they want for personal needs.

3. A few localities only give vague, general directions but fail to provide specific organizational leadership in this regard, and they perform this work perfunctorily.

4. Some localities only pay attention to stabilizing the ownership of mountains and forests by issuing title certificates but neglect the practice of the system of responsibility in forestry. These problems are attracting the attention of departments concerned.

CSO: 4007/92

BRIEFS

MU US DESERT TRANSFORMATION--Hohhot, 3 Nov (XINHUA)--China's Agricultural Commission has decided to transform the Mu Us Desert and semidesert area which runs through the Inner Mongolia and Ningxia Hui Autonomous regions and Shaanxi Province and turn it into forest and pastureland by the end of 1990, according to a preparatory meeting held recently in Uxin Banner, a county in Inner Mongolia. The 60,000 square kilometer area is inhabited by 1.2 million Mongolian, Han and Hui people. The transformation is a part of the great shelterbelt project across northwest, north and northeast China. The Mu Us has a fair amount of rainfall and in the past 20 years and more, the local people have done some transforming through collective effort by planting trees around their villages and growing some crops. The specialists who attended the meeting have put forward a program of standards and requirements for transforming the desert and semidesert area. There are four such major areas in China, the Mu Us being one. The detailed plans will be worked out by the end of 1983. Funds for transformation will be allocated by the state. [Text] [Beijing XINHUA in English 0751 GMT 3 Nov 81 OW]

CSO: 4020/29

ANHUI

BRIEFS

SUXIAN PREFECTURE HARVEST--Suxian Prefecture, Anhui, had reaped an unprecedented all-round good harvest this year. The prefecture's total grain output may reach 5.16 billion jin, an increase of more than 1 billion jin or 24.2 percent over the last year. Output of oil-bearing crops totals 2.42 million dan; cotton, 733,600 dan; jute and ambary hemp, 755,800 dan; topping the last year by 65.2, 18.7 and 25.8 percent respectively. Output of flue-cured tobacco totals more than 450,000 dan, an increase of 440 percent over last year. Output of silkworm cocoons totals 4,833 dan, and fruits total 33.5 million jin, an increase of 35.6 percent and 13 percent respectively over last year. The number of draft animals is 581,200 this year, or 16 percent more than last year. [Hefei Anhui Provincial Service in Mandarin 1100 GMT 18 Nov 81 OW]

INDUSTRIAL CROPS--Anhui Province has reaped an all-round bumper harvest of industrial crops this year. The province's total output of oil-bearing crops, tea, flue-cured tobacco, jute and ambari hemp are all records. This year, this province's total output of rapeseed reached 1.3 billion jin, 1.6 times greater than last year. Production of peanuts, soya beans and sesame has also greatly increased. Total output of tea is 700,000 dan, 60,000 dan more than last year. Production of flue-cured tobacco this year is some 2 times greater than last year. Total output of cotton has increased by 15.8 percent. Output of jute and ambari hemp is 4 million dan, 43 percent more than last year and is the highest production figure in the whole country. As the province has reaped a bumper harvest, it has overfulfilled its quotas for procuring rapeseed, tea and flue-cured tobacco. By the middle of October, the amount of cotton, jute and ambari hemp procured was 1.7 times and 37 percent respectively more than in the corresponding period last year. [HK030707 Beijing ZHONGGUO XINWEN SHE in Chinese [no time given] 24 Oct 81 HK] Because of a bumper tobacco harvest, this year's production of flue-cured tobacco will be 2.11 times more than last year. Total jute and ambari hemp production this year surpasses last year's by some 1 million dan. Fruit production is expected to increase 9.7 percent compared with last year. [OW291215 Hefei Anhui Provincial Service in Mandarin 1100 GMT 28 Oct 81 OW]

CSO: 4007/92

BRIEFS

AGRICULTURAL PRODUCTS PROCUREMENT--The rural areas in Beijing Municipality have developed production of agricultural and sideline products this year despite natural calamities, because they seriously implemented the party policies. From January to September, the total procurement of agricultural and sideline products amounted to 570 million yuan, an increase of 27.8 percent over the corresponding period last year. According to statistics, 700 million jin of grain was procured, showing an increase of 300 percent; 289 million jin of pork was procured, an increase of 10.4 percent; 45.64 million jin of eggs was procured, an increase of 21 percent; 7,064 goats were procured, an increase of 190 percent; and 1,4 billion jin of fresh vegetables were procured, an increase of 7.7 percent over the corresponding period last year. Procurement of other sideline products such as fruit also increased. [Beijing City Service in Mandarin 2300 GMT 18 Oct 81 HK]

CSO: 4007/92

BRIEFS

TEA PROCUREMENT--As of the end of October, Fujian Province had procured over 438,000 dan of tea, or 8 percent more than this year's procurement plan. This represented an increase of 33,000 dan over the same period last year. This year, party committees and governments at various levels in Fujian Province attached particular attention to tea production. With the implementation of the production responsibility system in most of the tea-producing communes and production brigades in the province, production enthusiasm of the tea peasants has been greatly boosted. [OW111454 Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 9 Nov 81 OW]

DATIAN COUNTY GRAIN HARVEST--Datian County, Fujian, has reaped a good grain harvest this year despite natural disasters. The county's total grain output this year is more than 207 million jin and average per mu grain yield reached 965 jin. Both are new records.[Fuzhou Fujian Provincial Service in Mandarin 1120 GMT 17 Nov 81 OW]

CSO: 4007/92

FACTORS TO BE CONSIDERED IN UNDERTAKING MAJOR IMPROVEMENTS OF FIELDS EXPLAINED

Guangzhou GUANGDONG NONGYE KEXUE [GUANGDONG AGRICULTURAL SCIENCES] in Chinese No 5, 8 Sep 81 pp 21-22

[Article by Huang Shengchi [7806 5116 7459]: "An Exploration of How to Evaluate Economic Results in the Transformation of Low Yield Fields"]

[Text] Guangdong Province has 15 million mu of low yield rice paddies with yields of less than 800 jin per mu for which a very great potential for increased yields through improvements exists. In 1980, the province made improvement of low yield fields the main thrust of farmland capital construction, launching planned and focused work for the transformation of low yield fields. By transformation of low yields is meant comprehensive renovation of existing fields, and change in their production conditions to attain the goal of consistently high yields. This was done by the people themselves with government assistance. This required extreme attention to the economic results derived from transformation of low yield fields so that the peasants would see from actual results achieved that changes in production conditions are essential to production, and that they are economically worthwhile. But how should one go about transforming low yield fields to get rather good economic results? In the following, problems in this regard are discussed.

(1) Principles and Requirements For the Evaluation of Economic Results of the Transformation of Low Yield Fields

In deciding the various technical measures to be taken for the transformation of low yield fields, it is necessary, first of all, to compare and study the conflicting relationships between results and conditions, results and expenditures in transforming low yield fields in order to determine the optimum combination of programs to be used.

As far as the conflicting relationship between results and conditions is concerned, in order that transformation of low yield fields might produce good results in increased yields and increased income, it is necessary to adopt technical measures to change the conditions of production. Change in production conditions requires investment. Consequently in deciding which technical measures to take, cone cannot stray from certain natural conditions and economic conditions. For example, standards for some measures are high and these measures can produce quite good economic results, but the investment required is great and the masses have only limited capabilities. Once the transformation of low yield fields had been completed, the investment cannot be recouped for several years, so such methods cannot be used for the time being. Only when investment is small, benefits quick, and small measures used to produce large results will the peasants accept them.

In the case of the conflicting relationship between results and expenditure, by expenditure is meant expenditure of labor. Settling the conflict in relationship between results and expenditure means minimum expenditure of labor to achieve maximum economic benefit. Thus, on the question of land use following transformation of low yield fields, there is a difference between growing single crops and diversified crops. In my view, following transformation of low yield fields, the crop pattern should not be one of grain only, but rather the development of both grain production and adaptation of general methods to local situations for the development of sugarcane, mulberry, fruit, fish, and forests in diversification. This will both develop commodity production, increasing output and earnings, and transform the ecological environment for better use of land resources. Its economic benefits will be fairly great.

On the basis of the foregoing principles and methods for evaluating economic benefits resulting from transformation of low yield fields, a brief explanation of the ingredients and criteria for evaluating the economic results of the transformation of low yield fields is provided as follows: 1. The ingredients include: (1) Seeing whether fairly large growth occurs in output and output value of farm products and in net earnings received from them. (2) Does an increase in output really occur in the same year as the investment was made, and does it help advance readjustment in farm cropping patterns? (3) Are gains greater than expenditures? (4) Is the period of return on investment fairly short? 2. Specific criteria: (1) Grain yield increases in the first year following transformation of more than 150 jin per mu, and sugarcane yield increases of about 1 ton. (2) While assuring equitable increases in grain output, making sure that 1 out of every 10 mu (or 7 - 8 mu) of transformed land can be shifted to the growing of economic crops. (3) Combine the renovation of abandoned ponds and the construction of mountain ponds to raise fish with development of the livestock industry, using the pond foundations to grow economic crops for fairly high economic income. (4) Make sure that net income from increased production deriving from transformed land during the first year is close to expenditures for the transformation of the land, and make sure that funds invested will be recouped within 1 or 2 years. Are the above economic evaluation criteria too high? Let us take the example of actual work done in Foshan Prefecture during 1980 in the transformation of low yield fields. They grew paddy rice on 390,000 of the 420,000 mu that they had transformed, and produced an increased yield of 205 jin per mu. They grew sugarcane on 10,000 mu for an output totaling 40,000 tons, rotationally cropped 20,000 mu of peanuts for an output of 4 million tons; and 3,800 mu of newly built fishponds produced an increased output of 500,000 jin of pondfish. Calculating at list price the increased output of rice, sugarcane, peanuts, and pondfish alone, income totaled 13.14 million yuan, a 7.63 million yuan increase over the previous year. Expenses during 1980 for the transformation of the low yield fields had been 7 million yuan, so they completely recouped their investment in a single year.

(2) The Problem of Selecting the Best of Two Types of Combined Technical Plans

There are two types of combined technical plans for the transformation of low yield fields. The first type is the combined technical plan for the methods of renovation to be used in changing production conditions. The second type if the combined technical plan for methods of making sensible use of the land once the low yield fields have been transformed.

Let us talk about the first type first. Transformation of low yield fields entails the selection of specific renovation methods to perfect the farmland production system, improving and creating a fine ecological environment in the farmland material cycle so that small measures can produce large results. Therefore, in the selection of renovation methods to be used, it is necessary to keep in mind the principle of change in production conditions and small investment for rapid and good results. This is the fundamental requirement in making the best selection in the first type of combined technical plan. For example, in transforming mountain sinkhole fields, sometimes only a single thing is done such as making a ditch to drain away excess water, or making "three ditches," or leveling the land and digging large earthworks, but increases in yields from such activity are not striking. Another method is comprehensive renovation whereby something is done about water, soil, fertility, and both mountain tops and mountain bottoms. When production conditions are changed and the production system perfected, results in increased yields are fairly remarkable. In the Honghua Production Team of Fucheng Commune, Yu'nan County, for example, 267 mu of cold low-lying fields with deep mud in them were located in 11 mountain sinkholes, producing yields of only slightly more than 500 jin of paddy per mu. For the past several years they have made comprehensive renovation of these sinkholes using the method of "one pond, three ditches, one manure shed, and two farms (hog farm, fruit farm). Throughout the production team, seven small mountain ponds were built for use both in raising fish and for irrigation. "Three ditches" were made in the mountain sinkhole fields, totaling more than 10,000 meters. At the head of the fields in the 11 mountain sinkholes, 13 manure sheds or manure pits were built. Three pigpens were built, and in out-of-way mountain areas, in "three ditches" with transformed soil, and at the base of ditches 10,225 fruit trees of various kinds were planted. Control of the fields and control of the mountain were combined. At the bottom of the mountain, water was controlled and the soil transformed, while at the top of the mountain both water and soil were conserved. On 2,000 mu of mountain land were planted 1,000 mu of dayesuo [1129 0673 4792], 500 mu of yugui [3768 2710], and 150 mu of bamboo. After several years of comprehensive renovation, in 1980, the production team had yields of 1,150 jin per mu for the whole year, a 90 jin increase over 1979. Collective distributions averaged 290 yuan per capita, each person receiving 117 yuan more than in 1979. These measures naturally required a certain investment of funds and expenditure of labor, but results were quite good.

Second, let us talk about the second type. This plan is the study of how to observe the economic benefits deriving from use of rational use of land techniques. Once low yield fields have been transferred, there are various technical plans for use of the soil. One is a plan of sole growing of grain; another is the adaptation of general methods to local situation for a combination of the growing of grain and of economic crops. For example, the Fifth Production Team of Xiner Production Brigade, Baijiao Commune, Doumen County planted nothing but grain following transformation of its low yield fields. Yields fluctuated around 800 jin per mu, and distributions averaged somewhat more than 50 yuan per capita. In 1980, the team undertook a combination of transformation of low yield fields and readjustment of crop patterns. Of the teams' 470 mu of cultivated land, 290 mu was covered with river mud, 23 mu was used for newly dug fishponds, and 50 mu was converted to the growing of sugarcane. Grain yields increased by 343 jin per mu over 1979 for a total increase in output of 110,000 jin, and sugarcane production increased by 1.1 ton pew jin. Fishpond output increased 4,000 jin. Distributions per capita averaged 188 yuan, a 133 yuan increase over 1979. Farming production costs amounted to 24,000 yuan, 10,000 yuan less than in 1979, and net income amounted to 34,000 yuan, 13,000 yuan more than in 1979. Expenses incurred in transformation of the low yield fields amounted to 11,000 yuan, more being gained than spent within the same year for a reconciliation of the conflict between expenditures and benefits. Thus it can be seen that once low yield fields have been transformed, comprehensive operation can make better use of the land and is a combined technical plan that merits adoption.

If transformation of low yield fields is to achieve decent economic benefits, sensible plans and meansures must be used. Experiences must be summarized on renovation measures, and the best selection made of combined technical plans.

9432
CSO: 4007/65

BRIEFS

FIXED ASSETS CHECK--More than 70 percent of communes and brigades in the Guangdong rural areas have completed clearing up and checking of fixed assets. Since the cooperativization of agriculture in our province, communes and brigades have installed quite a number of fixed assets. During the chaotic 10 years, the effective management system was sabotaged. Since responsibility systems fixing farm output quotas for each household were implemented, fixed assets have been indiscriminately occupied and distributed. The Guangdong Provincial CCP Committee and the people's government held: The various kinds of responsibility systems implemented in the rural areas are for the purpose of readjusting and reforming the management of the collective economy. They are not meant to change the system of ownership. We must strengthen, but not weaken, management over collective fixed assets. Since September 1980, professional core groups have been trained to take care of the fixed assets. The checking groups have done some meticulous work and they have set up systems to take care of, repair and use the fixed assets. According to the statistics of 19 trial-point communes, the funds used for repairing agricultural machinery have decreased by approximately 9 percent. [Guangzhou Guangdong Provincial Service in Mandarin 1000 GMT 3 Nov 81 HK]

PRODUCTION RESUMED--Guangzhou, 4 Nov (XINHUA)--Normal production has resumed in Yangchun and Yangjiang counties in southwestern Guangdong Province, which was severely hit by heavy rains between September 27 and October 8, according to provincial authorities. Accommodations have been provided to 8,200 homeless flood victims in Yangchun County. In an effort to reduce losses, peasants are now repairing breached dikes, draining excessive water from paddy rice fields, straightening rice shoots and applying manure. In cases where late rice was seriously damaged, peasants have extended land planted to winter crops, such as wheat, sweet potatoes, potatoes, peas and broad beans. Yangjiang County planted an additional 4,000 hectares in wheat. More than 53,000 hectares of farmland and 1,000 villages in the two counties were submerged following two torrential rains that dumped over 700 millimeters of water. [OW041233 Beijing XINHUA in English 0701 GMT 4 Nov 81 OW]

CSO: 4007/92

BRIEFS

AUTUMN HARVEST--By the end of October, Guangxi region had reaped mid-season and late rice from some 2.8 million mu, some 400,000 mu more than in the corresponding period last year. The region has reaped late corn from 260,000 mu, 160,000 mu more than in the same period last year. Liuzhou Prefecture has now reaped late rice from some 53,000 mu. Jingxi County has now reaped late rice on some 130,000 mu, some 101,000 mu more than in the corresponding period last year. [Nanning Guangxi Regional Service in Mandarin 1100 GMT 4 Nov 81 HK]

CSO: 4007/92

BRIEFS

LATE AUTUMN FARMING--Despite drought, all rural areas in Guizhou Province have crash-sown late fall crops, including potatoes, on 1.022 million mu, 2 and 1/2 times greater than last year's sown areas. This province has suffered extraordinarily big drought and the state council appropriated special funds of 5 million yuan for fighting drought and sowing seeds. Anshun Prefecture has overfulfilled its quota for sowing late fall crops by 4.2 percent and sown late fall crops on 125,100 mu. Tongren Prefecture which is a seriously stricken area has sown late fall crops on 70,400 mu. [HK030418 Guiyang Guizhou Provincial Service in Mandarin 2315 GMT 14 Oct 81 HK]

CSO: 4007/92

CAMPAIGN AGAINST RODENTS URGED

Increase in Numbers of Rodents

Shijiazhuang HEBEI RIBAO in Chinese 21 Sep 81 p 2

[Article by Dong Guiti [5516 2710 7344] and Zhang Shujian [1728 2579 0313]

[Text] A survey conducted by departments concerned shows a trend toward rather severe outbreaks of rats everywhere in Hebei Province this fall. Both the area and the density are larger than last year. At the present time all levels of government are in process of diligent implementation of the spirit of Provincial Rat Extermination Conference, are adopting measures, and launching a fall rat extermination campaign. The provincial government has called upon all prefectures to be sure to improve their understanding of rats, place rat extermination work on their agenda, earnestly strengthen leadership, and adopt effective measures to launch one or two mass rat extermination shock campaigns under the unified control of counties before the end of October.

Throughout Xian County vigorous efforts are underway to raise cats, and most recently 8,000 yuan has been collected for the purchase from northeastern China of 896 cats to be placed in each production brigade. This county has also encouraged brigades and communes to sign contracts for the raising of cats with commune members stipulating that: for each cat bought by the bridage collectively, a price of 5 yuan will be paid for, all other kittens reverting to the ownership of the household. Thanks to the careful attention of the County CCP Committee and the adoption of effective measures, cat raising is developing rapidly throughout the county. In Huanglupu Brigade of Benzhai Commune, in Tanzhuang Brigade in Nanhetou Commune, and in Shuiniudian Brigade in Shanglin Commune, virtually every household is raising a cat.

'RIBAO' Commentary

Shijiazhuang HEBEI RIBAO in Chinese 21 Sep 81 p 2

[Articl by Commentator]

[Text] During the past several years, quite a few prefectures have reported being overrun with rats. In some places, reckless use of extremely poisonous pesticides has killed off large numbers of the natural enemies of rats causing the rat menace to become worse. A survey shows the farmland area infested by rats last fall to have been more than 15 million mu. This increased to more than 31 million mu this spring. Because of the strengthening of leadership in rat extermination since March, arousal of the masses, and use of comprehensive methods of prevention and control, the rat problem has been brought under control. This has played major role in assuring the safe growth of spring and summer crops. At the same time a preliminary survey of rat types has been done, and a group of backbone cadre has been trained in rat prevention and control techniques. In some counties, protection of cats and increase in the number of cats has shown definite progress.

Judging from the current situation, quite a few problems still exist in the province's rat extermination work. The greatest problem is that some places lack an understanding of the seriousness and danger posed by rats. The problem is not given sufficient attention; leadership is not strong; rat extermination is conducted in a very unbalanced way, and rate extermination techniques are not sufficiently well known. This situation must be changed rapidly. In the task of rat extermination, we positively may not be relaxed or negligent; we must continue to take matter firmly in hand, vigorously arouse the masses, and steadily and, without let up, practice elimination and control in an effort to bring rats under control throughout the province within 2 or 3 years. To this end, all levels of the party organization and government must bring to bear a high degree of attention to rats, handle is as an important task, do good organizational work, make specific people responsible, and have a specialized corps. The rat extermination of ordinary years must be combined with shock rat extermination. While teaching the masses routine rat extermination, several shock rat extermination campaigns concentrated at specific times should be conducted annually to control the spread of rats. Attention should be given to scientific rat extermination, with the plant protection stations in each county making forecasts on the rat situation one of their tasks, clearly designating persons responsible, taking prompt action on rat matters, issuing reports, directing local rat extermination work, and giving attention to the accumulation of scientific data. All levels of units concerned should give attention to technical training work, and the wide dissemination of rat extermination knowledge so that commune and brigade rodent extermination technicians can distinguish rat types, can ferret out rats, can prepare bait and set it out, and be able to direct the masses in rat extermination. It is also necessary to adhere to implementation of comprehensive programs of prevention and control, and adopt various measures for prevention and control through the adaptation of general methods to local situations, both vigorously spreading devices to exterminate rats and actively advocating the raising of cats to kill rats.

As an accompaniment to the launching of mass rat extermination work, each prefecture will inevitably summarize some good experiences and bring to the fore rat extermination activists. All jusrisdictions should promptly summarize and spread experiences, and make a point of giving recognition to good people who have done a good job in rat extermination work to promote solid, protracted development of rat extermination work. In order to make rat extermination work highly effective, all levels of scientific and technical departments, industries, business, sanitation, and cultural and educational departments concerned should work in close coordination and cooperation to exterminate rats.

9432
CSO: 4007/61

POINTERS GIVEN FOR SOWING WHEAT IN DRY CONDITIONS

Shijiazhuang HEBEI RIBAO in Chinese 2 Oct 81 p 1

[Article: "Overcome Fear of Difficulties To Do a Good Job of Fighting Drought to Plant Wheat. Comrades In Charge at Provincial Department of Agriculture Remarks on Problems in This Autumn's Fight Against Drought to Plant Wheat"]

[Text] Recently comrades in charge at the Provincial Department of Agriculture made some remarks about how to do a good job of fighting drought and planting wheat this autumn.

The comrades in charge at the Provincial Department of Agriculture said that the drought situation in the province's major wheat growing area is becoming increasingly severe. Most parts of the province have had either no rain or little rain since mid-August, and the drought situation in the major wheat growing area in the south central part of the province is particularly serious. This poses very great difficulties in planting a sufficient quantity of wheat on time, and in growing sturdy seedlings before the onset of winter. Therefore, leaders at all levels should go down to the grassroots levels and, on the basis of different kinds of problems existing in communes and brigades, do a good job of sparking ideological work to fit the situations. They must get a thorough understanding of the moisture situation field by field, use realities to indoctrinate cadres and the masses, and overcome the feeling of paralysis. In places where fear of difficulties is serious, they should organize a set of priorities for action on wells, ditches, pumps, and such water conservancy equipment and water lifting equipment, zero in on existing problems, recommending ways to solve them, and putting the solutions into effect one at a time. In drought stricken wheatfields that have shallow fresh water wells, the masses should be aroused and general methods adapted to local situations to make some vacuum [pump] wells, laotoule [5071 7333 3867], wells and radial wells to fight drought. Taking the attitude that one more mu watered is one more mu of grain strive to enlarge the irrigated area. In places where water resources are inadequate, but where drainage is rather good, slightly saline water may be scientifically used to water the soil. In places given to conservation in the use of water, guarding against water percolating from field furrows, and not using any flood irrigation.

The comrades in charge at the Provincial Department of Agriculture also said that in most parts of the province systems or responsibility for wheat production have already been put in place, at the production team level and this is an extremely favorable situation for doing a good job of fighting drought and growing wheat.

However, some production teams have not yet instituted such a system, and in some places after instituting large scale assignment of responsibilities, cadres have had nothing more to do with the matter. These problems directly impair the smooth development of the work of fighting drought and planting wheat. Each jurisdiction should therefore resolutely act in accordance with the spirit of the Provincial CCP Committee's 1981 "Notice About the General Promotion of a System of Responsibility Linking Compensation to Production of Wheat," giving further emphasis to institution of a system of responsibility for wheat production. Recently leadership comrades in the Provincial CCP Committee noted that everything possible should be done to plant wheat on time, and when putting into effect a system of responsibility for fields hurt the planting of wheat, the planting should be done first and the system instituted later. In addition, it is necessary to make full use of existing farm machines and enlarge as much as possible the area plowed and sown by machines so as to be able to plant more wheat on time. Places having the necessary water should place management of water conservation facilities and irrigation of the land under the unified management of production brigades or production teams, set up corresponding irrigation management systems, and institute "several fixed" systems of responsibility so that limited water resources can be used with maximum effectiveness for irrigation.

The comrades in charge at the Provincial Department of Agriculture said finally that efforts should focus intensely on the growing of full stands of sturdy wheat seedlings before the onset of winter, and a good job done in fighting drought to plant the wheat. As a result of the enduring drought in Hebei Province this year, the area of spring sown crops has declined, while the summer sown crop area has increased by more than 10 million mu over ordinary years. As a result, crops harvested in autumn will mature late, and there will be little time between the harvesting of one crop and the planting of another. This poses even greater difficulties for the planting of wheat on time. Thus, it will be necessaiy to harvest each plot as it ripens, and harvest corn that is on the verge of full ripening, letting it ripen later, using every possible means to create conditions for timely planting. In addition, planting should be done only when soil moisture is sufficient. This is essential to assure a full stand of sturdy seedlings. The masses have a saying that, "In the planting of wheat and in the autumn care of wheat, planting when there is sufficient soil moisture is the key." In actual practice, this means adherence to the adaptation of general methods to local situations. Where water conditions are good and where the land is cleared of the last crop early, the land should be plowed first, watered thoroughly, tilled and then planted. When planting has to be done right after the harvesting of the previous crop and there is no time for thorough watering, watering can be done on top of the stubble from the previous crop after which the land may be plowed, harrowed, and planted. When time is at a premium, in order to get the wheat planted on time, sowing may be done first and watering done afterward. In summary, there has to be sufficient soil moisture to assure a full stand of sturdy seedlings. In arid areas where water is insufficient, the land should be leveled as early as possible to preserve underground soil moisture and to save on surface water. Rush planting is then done to take advantage of soil moisture and assure a full stand. In addition, attention should be given to spreading sufficient base fertilizer and levelling the land carefully. Superior seeds should be selected. Attention should be given to prevention of underground insect pests and determined efforts made to win the battle against drought so that wheat can be planted in order to lay a good foundation for winning a bumper harvest during the following summer.

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CSO: 4007/61

BRIEFS

TANGSHAN UNDERGROUND WATER--Following 4 years of effort, the hydrology and geology contingent of the Hebei Provincial Bureau of Geology recently completed the task of municipal water supply hydrological and geological prospecting at Fengrun New District in Tangshan to provide ample underground water and a large amount of hydrologial and geological data for the reconstruction of the Tangshan municipal water supply, which was destroyed by a violent earthquake. The Fengrun New District project in Tangshan is the major project for the reconstruction of Tangshan. Beginning in 1977, the Hebei Provincial Hydrological and Geological Contingent carried out hydrological and geological examination, physical exploration, surveying, and long term observations in this new municipal district and an area of 390 kilometers around it. Within 150 square kilometers of this area, they prospected and conducted large bore water pumping tests, obtaining large amounts of scientific data and materials. Verified static reserves of underground water amount to about 3.6 billion tons; water quality is good; salinization, alkalinization, and mineralization is at a low level; the water contains no pollutants; and it can satisfy the needs of industrial and agricultural production and the people's livelihood at a rate of 180,000 tons per day. They also determined the laws governing the way in which the new district's underground water is replenished, its flow path, conditions under which it drains away, and changes in water level. They also analyzed reasons for regional decline in the water table, and they put forward constructive proposals and measures for rational development of underground water, and prevention of pollution of underground water. [Text] [Beijing GUANGMING RIBAO in Chinese 27 Oct 81 p 2] 9432

CSO: 4007/67

WANG LUMING REPORTS ON DISASTER-RELIEF WORK

SK190430 Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 18 Nov 81

[Excerpts] According to our reporters, Comrade Wang Luming, secretary of the provincial CCP committee and deputy governor of the province, at a provincial experience exchange meeting on relieving disasters through production, urged the broad masses of cadres and people in disaster areas to display a revolutionary spirit of self-reliance and arduous struggle, do a better job in relieving disasters through production and try in every possible way to reap a bumper harvest of all crops next year.

Comrade Wang Luming delivered a speech at the provincial experience exchange meeting on 17 November. In his speech, Comrade Wang Luming first analyzed the seriousness of flooding and waterlogging in our province this year and talked about the pattern of disasters. He said: According to the pattern of periodic changes of droughts and waterlogging in our province, we may have entered a waterlogging period in the 1980's. Floods and waterlogging will increase. Our province has already had serious floods and waterlogging this year. It is predictable that the eastern part of our province will have a waterlogging problem next spring because fields in the eastern part were frozen by rain and snow last autumn. Discussing antidisaster measures is, fundamentally speaking, to figure out the regular pattern to prevent both droughts and waterlogging at the same time, enable different areas to concentrate on different problems and make preparations with construction projects, the ecology and agriculture taken into consideration. Only by so doing can we grasp the initiative in the antidisaster struggle.

Comrade Wang Luming said: Our province has 5 million mu of waterlogged lands, which requires us to make intense efforts to drain during the winter-spring period. Should we fail, we will be unable to sow the lands on time or do a good job in sowing work. Even worse, we might not be able to sow the lands at all. We should concentrate on drainage works in those areas where conditions permit. As for those areas [words indistinct], we should strive to drain the waterlogged lands as soon as they thaw next spring.

Many irrigation projects have been damaged by floods this year. We should adopt an over-all plan, take advantage of an opportune period in winter and concentrate on preparing all materials necessary for repairing flood-damaged projects which have high efficiency and need to be repaired immediately. This will mean repairing projects as soon as the lands thaw next year and enable them to play the role of draining waterlogged lands, irrigating and preventing floods.

CSO: 4007/92

HEILONGJIANG

BRIEFS

FLUE-CURED TOBACCO--In spite of floods, the 30,300 mu of flue-cured tobacco cultivated this year in Linkou County, Heilongjiang Province, are expected to yield a good harvest. Output is estimated at 80,000 dan, best in the province. [Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 28 Oct 81 SK]

SOYBEAN PRODUCTION--Harbin, 14 Nov (XINHUA)--The Songnen Plan in Heilongjiang Province has reaped a bumper harvest of soybeans this year. The total output is more than 2.5 billion jin or more than 20 percent increase over 1980. Hailun, Bayan and Binxian counties have each reaped more than 100 million jin of soybeans this year. [OW161153 Beijing XINHUA Domestic Service in Chinese 0015 GMT 14 Nov 81 OW]

FOOD PROCESSING--In the first 9 months of this year, grain and fat industrial enterprises throughout Heilongjiang Province made 33 million yuan of profits, an increase of 8.4 million yuan over the corresponding 1980 period. At the same time, the province processed 280 million jin of wheat more than in the corresponding 1980 period and processed 320 million jin of various oil-bearing seeds, twice that of the corresponding 1980 period. The province also produced 55 million jin of food and 7 million jin of oil and fat, a 10-million-yuan increase in profits for the enterprises. [Harbin Heilongjiang Provincial Service in Mandarin 2200 GMT 23 Oct 81 SK]

AFFORESTATION PROJECTS--By 28 October, 31 cities and counties in Heilongjiang Province had afforested 368,000 mu, 36.6 percent over the corresponding 1980 period. In early September the provincial forestry bureau allocated an extra 2.47 million yuan of loans to 25 cities and counties to help them build firewood and charcoal forests. [SK011002 Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT [no day] Oct 81 SK]

SUGAR MILL OPERATION--Harbin, 8 Nov (XINHUA)--Two medium-sized sugar mills, the Baiquan and Yilan sugar mills, were recently put into operation in Heilongjiang, with an annual production capacity of 10,000 tons of sugar each. Since 1978, five new sugar mills have been built in the province. Five more are now under construction. [OW091217 Beijing XINHUA Domestic Service in Chinese 0023 GMT 8 Nov 81 OW]

DAIRY OUTPUT--Harbin, 27 Oct (XINHUA)--Heilongjiang Province, whose dairy production is one-fourth the country's total, produced 14,000 tons of milk powder, condensed milk, butter, and other dairy products between January and September this year, 37 percent more than in the same 1980 period, according to the provincial light industry bureau. The increase is due largely to the policy allowing individuals to raise milch cows and goats for their own profit and raising the purchasing price for fresh milk. Heilongjiang now has more than 70,000 milch cows, 30 percent more than at the end of last year. With 23 million yuan allocated by the provincial government since last year, 30 creameries have been technically updated and their equipment replaced. This has increased the province's daily fresh milk processing from 300 tons to 550 tons. [Text] [OW311205 Beijing XINHUA in English 0751 GMT 27 Oct 81 OW]

CSO: 4020/29

BRIEFS

WHEAT SOWING--Since 23 September, Henan Province has stepped up the sowing of wheat. By 9 October, the province had plowed 38.41 million mu and sown wheat seeds over 8.21 million mu. [HK291017 Zhengzhou Henan Provincial Service in Mandarin 1130 GMT 11 Oct 81 HK]

FOODSTUFF INDUSTRY FORUM--The Henan Provincial Commune and Brigade Enterprise Bureau held a forum on boosting the foodstuff industry. The forum studied the important instructions of the central leaders on promoting the foodstuff industry, set up plans and adopted appropriate measures to promote the foodstuff industry in Henan. The participants reviewed the development of the foodstuff industry in the province. At present, there are some 7,000 food processing plants, wineries and cigarette factories having some 100,000 workers. In 1980, the total output value reached some 200 million yuan, and more fine quality goods have been produced. However, there are still some problems. Some leaders do not have a sound understanding of the foodstuff industry, the measures adopted are not effective and some valuable resources are wasted. We should solve these problems seriously. In the light of the situation in our province, the forum set up plans to develop the production of meat, eggs and other major foodstuffs. The leading departments of commune and brigade enterprises at all levels must strengthen leadership over the foodstuff industry, seriously implement an economic management responsibility system, and make full use of the advantages of the local situation so as to produce more marketable goods. We must bring into full play the spirit of self-reliance and the spirit of building an enterprise through arduous effort, incessantly improve the quality and varieties of products so that the goods we produce will become more competitive on the market. [Zhengzhou Henan Provincial Service in Mandarin 1100 GMT 31 Oct 81 HK]

CSO: 4007/92

BUMPER HARVEST ENCOURAGES EXPANDED RAPE CROP

Wuhan HUBEI RIBAO in Chinese 28 Sep 81 p 1

[Article: "Area Sown to Rape Throughout the Province Expanded By More Than 1 Million Mu Over Last Year"]

[Text] After a bumper rapeseed harvest in Hubei Province this year, the area that all jurisdictions in the province have planned for the sowing of rape this year has been expanded by more than 1 million mu over last year, the wetland area planted to rape increasing by more than one-half over last year, and the rape seedling nursery area increasing by more than 200,000 mu.

Hubei Province has had a bumper rapeseed harvest year after year for the past several years. As a result of their summary of experiences and analysis of the situation, all jurisdictions have concluded that the current rape production situation is a very good one. Jingzhou, Xianning, Xiaogan, Rangyang, and Yichang prefectures have let the situation be their guide. They have turned attention to the favorable opportunity, aroused the masses, continued readjustment of crop patterns, substantially stabilized the summer grain growing area, appropriately expanded the rape growing area, and have vigorously advocated and promoted the growing of rape in wetlands. At the same time, they have further perfected the system of responsibility for rape production. Right now in every jurisdiction throughout the province, rape sowing plans have been put into effect in fields and with the workforce; techniques for increased yields have been firmly taken in hand; and leveling of the land and growing of seedlings in nursery beds has been done to grow large and sturdy plants. The area throughout the province devoted to the growing of seedlings totals more than 800,000 mu, and the area for transplanting of rape amounts to 70 percent of the area planned for rape, 1 million mu more than last year.

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CSO: 4007/61

BRIEFS

MALE-STERILE HYBRID RICE--A fine crop of male-sterile hybird rice seeds has been harvested this year in Hubei Province. Figures as of early September from the Provincial Seed Company show the area of hybrid rice parent pair propagation in the province to have been 4,888 mu this year for a total output of 400,000 jin of male-sterile seeds, 244,000 jin more than in 1980 and one and one-half fold increase. Male-sterile rice yields were 80.1 jin per mu, an all time high for the province since it began to grow hybrid rice. The bumper crop of male-sterile seeds has layed a foundation for the speedy revival and development of hybrid rice in the province. [Text] [Wuhan HUBEI RIBAO in Chinese 28 Sep 81 p 1] 9432

CSO: 4007/16

BRIEFS

INDUSTRIAL CROPS--Hunan has reaped a bumper harvest of industrial crops this year. As of 10 October, the province had procured 1.26 million dan of flue-cured tobacco, an increase of 520,000 dan over last year. The province has also procured 710,000 dan of cotton. [OW231045 Beijing Domestic Service in Mandarin 2230 GMT 20 Oct 81 OW]

LATE RICE REAPING--By 4 November, the rural areas in Hunan Province had crash-reaped late rice on 44 percent of the 30 million mu to be reaped. Since the middle of October, it has been cloudy and drizzly and very windy occasionally. This may cause very big losses to the ripe late rice that is waiting to be reaped. In such circumstances, everywhere, crash-reaping late rice is regarded as the current central task of the rural areas. By the end of October, Changde Prefecture had reaped late rice on 61 percent of the total area sown to late rice. [Changsha Hunan Provincial Service in Mandarin 2330 GMT 5 Nov 81 HK]

HOUSEHOLD INCOMES--The Hunan Provincial Statistics Bureau conducted a sample survey of the income of 600 households of commune members in 20 counties. The investigation revealed that the per capita income in the first half of this year was 60.67 yuan in cash, 82 percent more than in the corresponding period last year. The increase of peasants' cash income was the result of further implementing the rural economic policies, establishing many forms of production responsibility systems and promoting production. According to statistics, the per capita income of the households of commune members from sideline occupations in the first half of this year was 41.59 yuan, which accounted for 68.5 percent of their total income and was 95.6 percent more than in the corresponding period last year. Each person of the 600 households spent an average of 55.12 yuan on commodities in the first half of this year, which was 93.1 percent more than in the same period last year. [HK040430 Changsha Hunan Provincial Service in Mandarin 2300 GMT 24 Oct 81 HK]

CSO: 4007/92

BRIEFS

CORN HARVEST--Jiangsu Province this year reaped a bumper harvest from its 6 million mu of spring and summer corn. Per-unit yield and total output in four prefectures increased by a wide margin. Total corn output in Xuzhou Prefecture topped last year's by more than 70 percent. According to statistics, the province's spring and summer corn output exceeded 2.88 million jin, topping last year's by more than 430 million jin and setting an all-time high record. In Huaiyin, Yancheng and Nantong prefectures, although the corn acreage was some 235,000 mu less than last year, total output topped last year's by more than 10 percent. [OW201125 Nanjing XINHUA RIBAO in Chinese 9 Oct 81 p 1 OW]

COTTON PURCHASE--As of 5 November, Jiangsu has purchased over 6.36 million dan of ginned cotton from the state, a 190-percent increase over the same period last year. [OW131323 Nanjing Jiangsu Provincial Service in Mandarin 2300 GMT 10 Nov 81 OW]

AGRICULTURAL PRODUCTION--Nanjing, 14 Nov (XINHUA)--As a result of the implementation of the production responsibility system, the more than 8 million peasants in Huaiyin Prefecture, Jiangsu Province, have won a very good harvest and earned more income this year, thus becoming more prosperous than ever. The targets of total grain production and per-capita income from distribution originally set for 1985--namely, 7.5 billion jin and 80 yuan respectively--have been met this year. Compared with last year, grain output this year has increased by some 800 million jin, cotton production by 100,000 dan and silkworm cocoon production by nearly 10,000 dan. Fruit production has broken the 1 million dan mark. Income distributed to each individual averages more than 86 yuan, showing a 23-yuan increase over last year. [Beijing XINHUA Domestic Service in Chinese 0144 GMT 14 Nov 81 OW]

JIANGSU COUNTY HARVESTS--Nanjing, 19 Nov (XINHUA)--Jiangsu's Sihong County has reaped record harvests of grain and peanuts this year. Of the 80 million jin peanuts harvested, 60 million have been sold to the state resulting in an average of 40 yuan per capita income to the county people. The county has harvested 650 million jin of grain, topping last year's output by nearly 30 percent. In the past, the county had to buy 20 to 30 million jin of grain annually from the state-controlled market. This year the county has sold some 50 million jin grain to the state. The per capital income has increased from last year's 42 59 110 yuan this year. [OW221441 Beijing XINHUA Domestic Service in Chinese 0025 GMT 19 Nov 81]

JIANGSU PEANUT PROCUREMENT--As of 10 November, Jiangsu Province had procured 60 million jin of peanut kernel, an increase of more than 100 percent over the same period last year. [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 21 Nov 81 OW]

CSO: 4007/94

BRIEFS

MINOR AUTUMN HARVEST--The Jiangxi Provincial People's Government recently issued a circular calling on all places to organize the minor autumn harvest well and in good time to gather in various kinds of wild plant resources. There are plenty of wild fruits, oil-bearing crops, starch and fiber plants in the province that can be harvested and used. [Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 8 Nov 81 OW]

JIANGXI COUNTY COTTON OUTPUT--Jiangxi's Gaoan County planted 98,000 mu of cotton this year. Total output rose 17.3 percent over last year. By 15 November, the county had procured 29,000 dan of cotton. [OW231427 Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 20 Nov 81]

CSO: 4007/94

BRIEFS

DIVERSIFIED ECONOMY--Jilin Province has greatly developed its diversified economy. This year it planted 5,398,000 mu of cash crops, 15 percent more than in 1980. Of the total mu of cash crops planted, 3,589,000 mu were sown to oil-bearing crops and 938,000 mu to beets, 73.9 and 3.1 percent more than in 1980 respectively. Jilin now has 5,928,911 head of pigs and 1,897,000 head of sheep, 71,620 and 130,000 more than in the corresponding 1980 period respectively. As calculated by the end of June, Jilin's output value for its commune- and brigade-run enterprises was 350 million yuan, 8.7 percent greater than in the corresponding 1980 period. [SK250226 Changchun Jilin Provincial Service in Mandarin 1100 GMT 22 Oct 81 SK]

AGRICULTURAL PRODUCTION--Changchun, 31 Oct (XINHUA)--The Jilin Provincial CCP Committee and the provincial people's government made a decision in 1979 to readjust the agricultural structure and have achieved good results. Total output of grain and soybean in 1979 and 1980 increased by 7.3 percent over that of the previous 2 years, while total output of oil-bearing crops increased by 76.6 percent and total output of sugarbeet increased by 109 percent. The total value of agricultural output in 1979 and 1980 increased by 8.8 percent as compared with 1977 and 1978 and the average income of peasants rose by 21.6 percent. In addition, the total value of forestry, livestock breeding, sideline occupations and fishery output in 1978 was 925 million yuan and rose to 1.2 billion yuan in 1980. [Beijing XINHUA Domestic Service in Chinese 0132 GMT 31 Oct 81 OW]

RICE INSTITUTE--Changchun, 10 Nov (XINHUA)--A rice institute has been established in the Yanbian Korean Autonomous Prefecture, Jilin Province, which will engage in research on developing cold-resistant and early-maturing rice strains and new cultivation methods. The institute is headed by Liu Changyin, a rice breeding export on Korean nationality. Director Liu worked as an agricultural technician after graduation from senior middle school in 1956. Over the past 25 years, he has done thousands of hybridization experiments and developed seven rice strains suitable for cold and mountainous areas. These include the "Wanbao No. 6," "Wanbao No. 11" and "Changfeng." Antu County, Yanbian Prefecture in the Changbai Mountains has frost free period of only 80 days a year. Planting of these new strains there raised rice yields from 1.5 tons to 6 tons per hectare. [Excerpt] [Beijing XINHUA in English 0738 GMT 10 Nov 81 OW]

CSO: 4007/92

LIAONING

COMMENTARY URGES FARMLAND PROTECTION

SK160618 Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 15 Nov 81

[Station commentary: "Treasure Every Inch of Land and Protect Farmland"]

[Excerpts] Liaoning is a province crowded with industrial cities. It has a large population but limited land. Farmland is valuable. However, with the development of socialist undertakings in recent years, the wasting of farmland in urban and rural construction has become serious, causing arable lands to severely decline. In the early days of the People's Republic, our province had 18.3 million people and 70 million mu of farmland; the average per capita farmland was 3.9 mu. By 1980, our province's population had grown to 34.86 million and the farmland had declined to 56.4 million mu; the average per capita farmland was 1.6 mu. In the past 31 years, our province's farmland decreased annually by 430,000 mu--equal to the farmland acreage of a medium-sized county. Our farmland is decreasing by 1,186 mu each day. This situation is not good at all.

There are many reasons for the decline in farmland. Apart from land appropriated for good reasons or washed away in floods, most of the farmland is arbitrarily appropriated for housing or other construction projects because of poor management. This has resulted in a serious waste of farmland. Appropriation of land for capital construction is serious. Some persons have appropriated land but did not make good use of it. Some appropriated land without authorization. Some communes and brigades recklessly appropriated tracts of farmland to establish tile and brick plants, thus damaging land resources. Some industrial and mining enterprises appropriated farmland for building staff living quarters under the pretext of building factories. Large tracts of land were appropriated for building houses for commune members in localities because no construction plans were formulated. Some illegally appropriated land for building large houses with a big garden and many rooms. Some even sold their old houses to buy new ones--a disguised form of selling their land.

Strengthening land management and strictly forbidding people to appropriate farmland is an urgent problem which merits the attention of all localities. First, we must educate the cadres and the masses to earnestly implement the policies on commandeering land issued by the State Council and the provincial people's government, take the over-all situation into account, treasure every inch of land and protect farmland.

Second, we must strictly enforce land commandeering procedures and ensure land is not wasted. With rapid improvement in the economic situation in rural areas, peasants will have money to build houses. It is estimated that about 300,000 peasant households in the province will build houses this year. About 1 million new houses covering 150,000 mu of land will be built. To cope with this new situation, all localities must formulate rural housing construction plans and stop recklessly building houses or appropriating land. No organs, mass organizations, enterprises and establishments are permitted to buy houses in the urban outskirts or from rural production teams and commune members and to rebuild these houses as residential buildings. Housing construction for urban residents or for staff members and workers of state organs, enterprises, establishments, industrial and mining enterprises should be included in the urban construction plan. No persons are allowed to appropriate rural production teams' land to build homes. Rural communes, brigades and commune members are not permitted to rent their land or to buy or sell their land in a disguised form. Appropriating and wasting no farmland benefits agricultural development and other construction undertakings.

CSO: 4007/92

LIAONING

GUO FENG REPORTS ON THRIVING RURAL SITUATION

OW150859 Beijing XINHUA Domestic Service in Chinese 0217 GMT 15 Nov 81

[Report by XINHUA correspondents Kong Qingju and Meng Xianjun]

[Excerpts] Shenyang, 15 Nov (XINHUA)--"In rural areas today, there are more farm and sideline products, more money in the hands of peasants, more surplus labor force and more surplus labor time." This is the deep impression gained by Guo Feng, first secretary of the Liaoning Provincial CCP Committee, when he conducted investigations recently in Haicheng, Yingkou and Gai counties. What should be done with the "four more's" in the rural areas? Leading party and government comrades at all levels should earnestly study the question and make vigorous efforts to find answers in order to further consolidate and develop the thriving rural situation.

By implementing various rural economic policies and various forms of production responsibility systems, Haicheng, Yingkou and Gai counties in northern Liaodong Peninsula have aroused the commune members' enthusiasm, increased labor productivity and thus found themselves with surplus labor forces. At present, surplus labor accounts for about one-third of the counties' total labor force.

This year the per capita income of the agricultural population from the collective economy averaged 172 yuan in the three counties. Adding income from household sideline production, the per capita income could reach more than 300 yuan.

After learning about these conditions, Guo Feng said: With more surplus labor force, localities with the available conditions can run industries and engage in commerce, service trades and transport. With more money, people can get married, build new houses and buy expensive goods. Therefore, the commercial departments should pay attention to the supply of industrial products to rural areas to meet the peasants' consumer demands. However, it is most important to guide the peasants to develop agricultural and sideline production in-depth and in-breadth. On the one hand, it is necessary to guide them to continue to do a good job in grain production; on the other hand, it is even more important to develop a diversified economy. Party organizations and cadres at all levels must guide the peasants to use their surplus funds, surplus labor force and labor time to develop a diversified economy and to expand reproduction.

On the question of "what should be done with more farm and sideline products," Guo Feng visited 20 communes in the three counties and talked with county and commune leading cadres, rural commercial workers and workers and staff members of commune- and brigade-run enterprises.

In view of the fact that farm and sideline products procurement channels are blocked in various places and to varying degrees, Guo Feng said: With the increased output of farm and sideline products, more of these products are being marketed and it is imperative that the processing industry catch up quickly. Judging from the prospects of the growing output of farm and sideline products, the orientation for the development of commune- and brigade-run enterprises should be mainly directed toward farm and sideline products processing.

CSO: 4007/92

BRIEFS

FIRE PREVENTION--A series of fire accidents occurred recently in rural areas of Liaoning Province. Two fire accidents which occurred in mid-October in communes in Kangping and Kaiyuan counties damaged over 12,000 jin of millet and Chinese sorghum. Another fire on 31 October in a commune in Xin County caused by poor management damaged over 160,000 jin of grain and 200,000 jin of rice straw. Other fires occurred in Shenyang, Fushun and Liaoyang municipalities, all causing unnecessary damages. To stop this, the provincial public security office issued a circular recently urging all public security organs to prevent such accidents in rural areas, investigate the causes of the fire, punish those who are derelict in their duty and cause fires and punish arsonists. [SK131116 Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 11 Nov 81 SK]

BUMPER HARVEST--Changtu County in Liaoning Province reaped a bumper harvest this year. The county's grain output is estimated at 1.79 billion jin, an increase of 200 million jin over last year. The county's soybean output is estimated to be 130 million jin, an increase of 30 million jin over last year. The county's agricultural earnings will increase 16 percent; its commune members' per capita income will be 150 yuan, 30 yuan more than last year. Commodity grain handed over to the state will also increase by 180 million jin. [SK131300 Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 12 Nov 81 SK]

CSO: 4007/92

BRIEFS

SOYBEAN OUTPUT--Nei Monggol Autonomous Region has reaped a bumper soybean harvest this year. According to statistics, the region is expected to attain over 320 million jin of soybeans this year, a 29.4 percent increase over the 1980 figure. It also increased its per-mu-yield from 96 jin in 1980 to 113 jin in 1981. [SK020557 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 1 Nov 81 SK]

BUCKWHEAT OUTPUT--Nei Monggol has reaped a bumper buckwheat harvest in 1981. The output is expected to be 148 million jin, 39.3 percent over 1980--the highest regional figure in over 10 years. The buckwheat sowing acreage in the region is 2.5 million mu, an increase of 4.4 percent over 1980. Bayannur League and Hohhot increased output by 110 percent and 150 percent respectively over that of 1980. [SK010939 Hohhet Nei Monggol Regional Service in Mandarin 1100 GMT 30 Oct 81 SK]

TOGTOH COUNTY GRAIN HARVEST--Togtoh County, Nei Monggol, overcame serious spring drought and autumn floods and reaped a good harvest. By 28 October, it had fulfilled its annual grain and oil-bearing seed procurement tasks. The county's grain output was 100 million jin. [SK050136 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 4 Nov 81 SK]

EGG PROCUREMENT--By the end of October, Nei Monggol had procured 23 million jin of fresh eggs, overfulfilling the annual plan by 49,000 jin. The region had sold 14 million jin of eggs to the state by the end of October, overfulfilling the annual plan by 2.5 million jin. [SK131148 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 11 Nov 81 SK]

BAYANNUR GRAIN HARVEST--Bayannur League in Nei Monggol has reaped a bumper harvest in 1981. According to statistics released by departments concerned, output of grain is expected to exceed 1 billion jin; oil-bearing crops, 160 million jin; and beets, 1 billion jin. The average per capita income of commune members from collective and domestic sideline occupations is estimated to be 170 yuan. [SK070734 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 6 Nov 81 SK]

ULANQAB GRAIN PROCUREMENT--By 10 November, Ulanqab League, Nei Monggol Autonomous Region, procured over 150 million jin of grains including wheat, naked oats, broom corn millet, buckwheat, glutinous millet and beans, a nearly 600 percent increase over the corresponding 1980 period. [SK171158 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 16 Nov 81 SK]

CSO: 4007/92

SHANDONG

BRIEFS

WHEAT SOWING--Despite a serious drought, Shandong Province had nearly fulfilled its original wheat sowing plan by sowing 50 million mu of wheat as of 24 October. Since September, the province has had only an average of 20 mm of rainfall, a decline of almost 80 percent from previous years. To overcome the drought and fulfill the wheat cultivation plan in a timely manner, party committees and governments at all levels in the province have attached great importance to autumn sowing and sent many cadres to the forefront to help combat drought. The provincial CCP committee and government sent eight deputy secretaries and deputy governors to prefectures and counties most seriously affected by the drought. Over 77,000 cadres worked on the forefront alongside the peasants to combat the drought. According to statistics, the province mobilized about 20 million people to combat the drought and irrigated over 40 million mu of land. [SK290752 Jinan Shandong Provincial Service in Mandarin 2300 GMT 26 Oct 81 SK]

COTTON PROCUREMENT -- As of 23 October, Shandong Province procured some 5.43 million dan of ginned cotton, overfulfilling the annual plan by 2 percent and an increase of 22.8 percent over the corresponding 1980 period. [SK251420 Jinan Shandong Provincial Service in Mandarin 2300 GMT 24 Oct 81 SK]

TOBACCO PRODUCTION--Shandong Province expects a bumper harvest from this year's cultivation of its 1.3 million mu of tobacco, drought notwithstanding. The total output is estimated at 4.1 million dan, an increase of 1 million dan over the 1980 level. By 15 October, the province had procured 3.7 million dan of tobacco, 112 percent of the procurement plan. [SK250529 Jinan Shandong Provincial Service in Mandarin 2300 GMT 22 Oct 81 SK]

LIVESTOCK BREEDING--Jinan, 16 Nov (XINHUA)--As of the end of October, the number of Luxi [7627 6007] fine breed cattle in Dongping County, Shandong Province, reached more than 14,000 head, increasing by more than 2,400 head over the number in 1979. The number of Xiaoweihan [1420 1442 1383] sheep, also of a fine breed, reached over 11,900 head, increasing by 4.5 times over the number of 1979. [Beijing XINHUA Domestic Service in Chinese 0145 GMT 16 Nov 81 OW]

CSO: 4007/92

NEW WHEAT VARIETY BEING PROMOTED

Taiyuan SHANXI RIBAO in Chinese 25 Sep 81 p 2

[Article: "Actively Promote New Wheat Variety"]

[Text] The Shulu County Seed Company is actively promoting new wheat variety, "Shi 74531." This variety has been bred through 8 years of joint effort by the Shijiazhuang Institute of Agricultural Sciences and the Malan Farm in Shulu County. Variety comparison testing, acclimitization evaluation, and provincial and prefectural superior variety testing conducted by various units between 1979 and 1981 have demonstrated that this variety possesses properties of three savings (saving of water, fertilizer, and seeds), four resistances (resistance to disease, to lodging, to cold, and to dry, hot winds), ease of growing, ease of care, and consistently high yields. In large area testing at four sites last year, this variety exhibited yields greater than the locally promoted "Jinfeng No 1," its yields averaging 718.8 jin per mu, 197.6 jin more or 37 percent more than for the control variety. Last year, 12 production teams demonstrated its yields on 450 mu of fields in Milan where water and fertility are high, producing yields averaging 963 jin per mu, and from 141 of these mu, the third, fifth, and ninth production teams produced yields of more than 1000 jin per mu. This year, this company has expanded the area planted to 20,000 mu, and has used the Xinleitou Commune as its principal demonstration area to lay a good foundation for a bumper wheat harvest and the rapid spread of the new variety next year.

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CSO: 4007/67

BRIEFS

BUMPER HARVEST--Mianyang Prefecture has overcome a serious flood and reaped a bumper rice harvest. The prefecture's total output of paddy rice from 4.66 million mu of land was 0.6 percent more than last year, which was a record year. This prefecture was the most seriously flood-stricken area in Sichuan Province and some 4 million mu of paddy rice was damaged to various degrees. Of this, of paddy rice 200,000 mu was inundated a[illegible] flattened and some 110,000 mu of paddy rice was severely damaged by the [illegible]. [HK101335 Chengdu Sichuan Provincial Service in Mandarin 2300 GMT 3 Nov 81 HK]

CSO: 4007/92

BRIEFS

JINHUA PREFECTURE COTTON HARVEST--Jinhua Prefecture, Zhejiang Province, has won a bumper harvest from its 175,000 mu of cotton. Per mu yield of ginned cotton averages more than 100 jin. Thus far the prefecture has delivered 122,000 dan of cotton to the state, overfulfilling the procurement plan by 1.3 percent. [Hangzhou Zhejiang Provincial Service in Mandarin 1040 GMT 18 Nov 81 OW]

CSO: 4007/92

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TITLE: "Follow Objective Principles to Arrange a Reasonable Crop System"

SOURCE: Shanghai SHANGHAI NONGYE KEJI [SHANGHAI AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 5, 5 Oct 81 pp 1-3

ABSTRACT: The crop system of an area is determined mainly by the heat energy and the atmospheric humidity of the locality. The socioeconomic condition and the level of agricultural science and technology should also be taken into consideration. Normally, in the cold temperate zone and temperate zone, it is one crop a year; in the warm temperate zone, 3 crops in 2 years; in north subtropical zone, 2 crops in a year; in the south subtropical and tropical zones and the equatorial zone, 3 crops a year, but in the same zone, such factors as topography, ecology and elevation will also cause variation of heat and humidity affecting the suitability of the crop system. At present, in Shanghai suburbs, the 3-crop system of grain-cotton and green manure-rice-rice in the eastern part has been successful but not as successful in the western part due to the poor soil condition and a deficiency of manpower. The required objective conditions for the 3-crop a year system are explained and in the opinion of the author a high and stable yield 2-crop system may be more reasonable and beneficial than the 3-crop system if the objective condition is not suitable.

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TITLE: "Soil Classification in Shanghai Region"

SOURCE: Shanghai SHANGHAI NONGYE KEJI [SHANGHAI AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 5, 5 Oct 81 pp 4-7

ABSTRACT: Soil survey and classification provide the necessary basis for agricultural regionalization. The group began to study the classification of Shanghai soils in 1979, using previous soil classification documents of 1959 and 1978 as references. For the convenience of future incorporation into the national system, the 5-level classification system: soil class, subclass, soil genus, soil species, and soil variety, is adopted. The 5 levels of classification and principles of nomenclature of soils of the various levels of classification are explained. This paper summarizes the background of the Shanghai Soil Classification Outline drafted and formulated by the authors and related pedological workers as a preparation for the second general soil survey of Shanghai which was launched in 1979.

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TITLE: "Molybdenum in Soils of Shanghai Suburbs and Its Effect"

SOURCE: Shanghai SHANGHAI NONGYE KEJI [SHANGHAI AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 5, 5 Oct 81 pp 11-12, 15

ABSTRACT: Molybdenum is a trace element necessary for the nutrition of plants and animals and its excess or deficiency in the soil will interfere with the normal development of plants and at the same time certain particular diseases will occur to men and animals. In 1979-80, a study was carried out on the content, distribution, and effectiveness of molybdenum in the soils of Shanghai suburbs. The average is found to be 0.13-0.16 ppm, lower or close to the critical value for molybdenum deficiency (0.15 ppm). Of all the soil specimens tested, the effective molybdenum content is lower than the critical level in 60 percent. In these soils, the application of molybdenum fertilizer has produced various degrees of yield increase results for peas, cabbages, rape, and other crops.

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TITLE: "Ammoniated Iron Sulfur Oxidation-reduction Bacteria in Paddy Soils and a Study on Their Enzymic Activity"

SOURCE: Shanghai SHANGHAI NONGYE KEJI [SHANGHAI AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 5, 5 Oct 81 pp 8-10

ABSTRACT: From the area of Dingshanhu-Baoshan of Shanghai, 30+ soil specimens are collected to proceed with soil microorganism and microorganism enzymic activity analysis. Results indicate that the content of nitrogen-containing organic matter of the soils is about 800-2500 jin/mu, higher in the soils closer to the city and the content of ammoniating bacteria is the same. The content of iron oxide bacteria varies in the same manner. The content of sulfate reduction bacteria is higher in the less fertile soils so is the activity of the reduction enzyme. In terms of soil profile, the number of bacteria and the activity are higher in the 0-10cm topsoil, compared with the 90-100cm bottom layer, but the activity of the sulfate reduction enzyme is higher in the botton layer.

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TITLE: "Effects of the Number of Feedings on the Growth of Meat-porkers"

SOURCE: Shanghai SHANGHAI NONGYE KEJI [SHANGHAI AGRICULTURAL SCIENCE AND TECHNOLOGY] in Chinese No 5, 5 Oct 81 pp 25-26, 28

ABSTRACT: The authors carried out 4 experiments on the effects of the number of feedings, while conducting a research on mixed feed for porkers. Piglets weighing about 20 kg of similar age are used and all are F_1 castrated hybrids. The control group are fed 3 times a day. The first experimental group are fed twice a day during the early period and once in the later period. There is one group fed randomly. The amount of feed consumed and the weight gain of the porkers of everyday and every month are recorded during the 103 days of each experiment. Results indicate that the porkers grow better if they are fed twice a day instead of once a day. Sharda et al (1977) also reported similar findings. It appears, however, that in some pig farms of Shanghai the porkers are fed many times a day, even throughout the night. According to the results of this study, feeding porkers more than twice a day appears to be unnecessary.

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CSO: 4009/112

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TITLE: "Error Correction of Numerical Prediction of Upper-air Situation Field"

SOURCE: Beijing QIXIANG [METEOROLOGICAL MONTHLY] in Chinese No 10, 10 Oct 81 pp 2-5

ABSTRACT: Although to a certain extent the various numerical prediction models simulate the various processes of atmospheric movement, they cannot precisely reflect the total phenomenon of the atmosphere; i.e. the prediction describes an atmospheric model and not the atmosphere itself. Even if such methods as error distribution, wave spectrum, etc. are adopted, the result of computation upon which the circulation prediction is based cannot help but to deviate from the actual situation. It has been more than 5 years since the Shanghai Municipal Research Institute of Meteorology began to apply the 3-layer simulation technique to make numerical prediction of high altitude circulation situation, the conclusions have remained qualitative and somewhat subjective in their actual application. This paper reports some attempts of the authors to analyze the errors made in the 500mb 24-hour prediction field. On the basis of the analysis, several error correction formulae are experimented for the purpose of finding a more objective technique of quantitative revision of the numerical prediction.

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TITLE: "Application of Cluster Analysis Method to Agroclimatic Classification"

SOURCE: Beijing QIXIANG [METEOROLOGICAL MONTHLY] in Chinese No 10, 10 Oct 81 pp 20-21

ABSTRACT: In the past, agroclimatic regionalization is largely made on the basis of analyzing the climate for selecting some obvious indices that are deemed to be significant to agricultural production. The classification system is, therefore, unavoidably subjective and random. Cluster analysis is a polyhedric and objective classification technique and its adoption can effectively produce a quantified agroclimatic classification. The authors used the cluster analysis technique to analyze the condition of agroclimate of Jilin Province and on the basis of the analysis, 26 representative stations and 5 agriculturally significant climatic indices for statistical computation are selected to divide the agroclimate of the province into 6 major types and 13 subtypes within each major type. The basic theory, method, and procedure of cluster analysis and the result of the sample analysis of Jilin Province are presented.

6168
CSO: 4009/116

Veterinary Science

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TITLE: "Survey of Condition of Pancreatic Fluke Infestation of Sheep in Some Banners (Counties) of Jilin and Nei Menggu"

SOURCE: Lanzhou SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY] in Chinese No 9, 20 Sep 81 pp 23-24

ABSTRACT: In the process of studying ways of treating sheep pancreatic fluke, the authors began in 1975 to carry out surveys of sheep farms of 8 communes of the 4 banners (counties) of Jilin and Nei Menggu. Sheep feces are mixed with water and allowed to precipitate for 10-15 minutes for examination under the microscope to count the fluke eggs. Abdominal incisions are made to tie the pancreatic-gall-bladder duct of the sheep before removing the pancreas and placing it in a dish for dissection, removing the parasites, identifying them, and counting them. Results of surveys with both methods indicate the rate of infestation to be 54.5 to 100 percent, averaging 77.3 percent of the 459 sheep thus examined. For prevention and control, hexachloro dimethyl benzene injections, avoiding grazing sheep in low and damp areas during Aug and Sep, exterminating the intermediate hosts (snails,) and breeding fluke-free herds of sheep are suggested.

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TITLE: "Damage, Prevention, and Control of Bovine Infectious Rhinobronchitis"

SOURCE: Lanzhou SHOUYI KEJI ZAZHI [JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY] in Chinese No 9, 20 Sep 81 pp 25-34

ABSTRACT: With the development of foreign trade and economic exchange, a large number of live animals and animal products are imported every year and some infectious diseases, nonexistent in China previously, will also be imported. One example is the introduction of bovine infectious rhinobronchitis when the Guangdong Overseas Chinese Commercial Company imported from New Zealand a herd of black and white dairy cows. Infectious bovine rhinobronchitis (IBR) is an acute respiratory contact infectious fever-producing disease of the cattle, It was discovered for the first time in 1950 in Western USA among beef cattle herds; later, it appeared among dairy cattle as well. The virus pathogen was isolated in 1956, being a type of bovine herpes virus. All its forms have been identified in the USA, Australia, New Zealand, Holland, England, and Japan. Some cattle are found to be long term carriers without apparent symptoms but their growth, development, milk productivity, and reproductive ability may be seriously affected. The characteristics of the pathogenatic virus, the infection pathways, the epidemiology, the technique of detection, the danger of the various symptoms, the possibility of infecting pigs, the technique of laboratory diagnosis, management and treatment of infected herds, and immunity and immunization of cattle against this diseases are introduced.

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